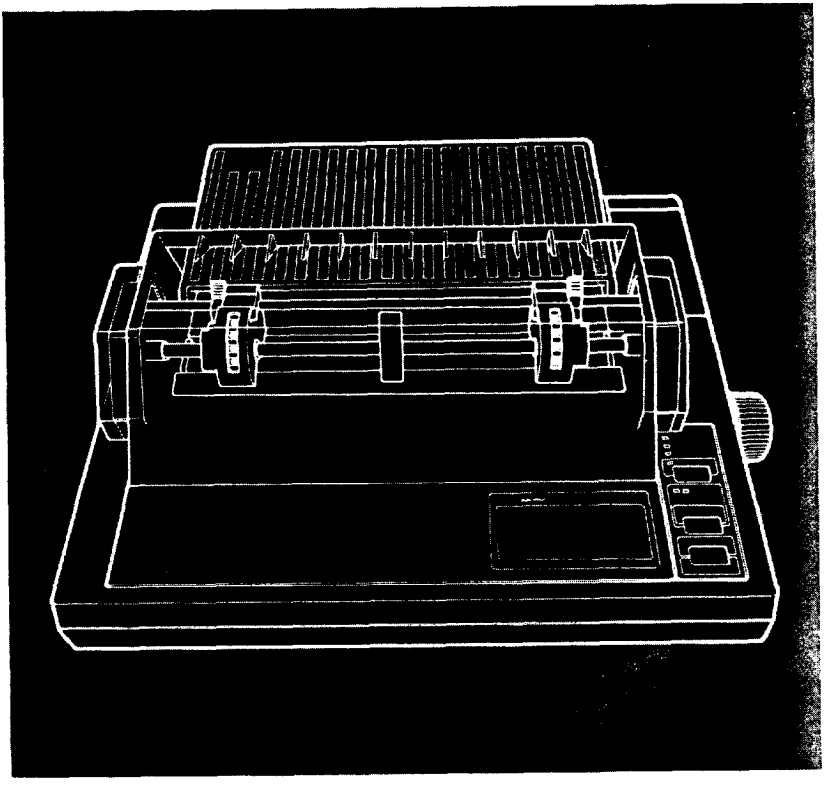
EPSON® ActionPrinter™ 3000



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User's Manual

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EPSON® ActionPrinter™ 3000

User's Manual

FCC COMPLIANCE STATEMENT FOR AMERICAN USERS

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits **are** designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and **can** radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio or television reception. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio and television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase **the** separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help.

WARNING

The connection of a non-shielded equipment interface cable to this equipment will invalidate the FCC Certification of this device and may cause interference levels which exceed the limits established by the FCC for this equipment. It is the responsibility of the user to obtain and use a shielded equipment interface cable with this device. If this equipment has more than one interface connector, do not leave cables connected to unused interfaces.

Changes or modifications not expressly approved by Epson America, Inc., could void the user's authority to operate the equipment.

FOR CANADIAN USERS

This digital apparatus does not exceed the Class B limits for radio **noise** emissions from digital apparatus as set out in the radio interference regulations of the Canadian Department of Communications.

Le présent appareil numerique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques **de** Classe B prescrites **dans** le règlement sur le brouillage radioeléctriques **édicté** par le Ministère des Communications du Canada.

IMPORTANT SAFETY INSTRUCTIONS

1. Read all of these instructions and save them for later reference.
2. Follow all warnings and instructions marked on the product.
3. Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. Do not use this product near water.
5. Do not place this product on an unstable cart, stand, or table. The product may fall, causing serious damage to the product.
6. Slots and openings in the cabinet and the back or bottom are provided for ventilation; to ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered. The openings should never be blocked by placing the product on a bed, sofa, rug, or other similar surface. This product should never be placed near or over a radiator or heat register. This product should not be placed in a built-in installation unless proper ventilation is provided.
7. This product should be operated from the type of power source indicated on the marking label. If you are not sure of the type of power available, consult your dealer or local power company.
8. This product is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the purpose of the grounding-type plug.
9. Do not locate this product where the cord will be walked on.

10. If an extension cord is used with this product, make sure that the total of the ampere ratings on the products plugged into the extension cord do not exceed the extension cord ampere rating. Also, make sure that the total of all products plugged into the wall outlet does not exceed 15 amperes.

11. Never push objects of any kind into this product through cabinet slots, as they may touch dangerous voltage points or short out parts that could result in a risk of fire or electric shock. Never spill liquid of any kind on the product.

12. Except as specifically explained in the User's Manual, do not attempt to service this product yourself. Opening or removing those covers that are marked "Do Not Remove" may expose you to dangerous voltage points or other risks. Refer all servicing in those compartments to service personnel.

13. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

    A. When the power cord or plug is damaged or frayed.

    B. If liquid has been spilled into the product.

    C. If the product has been exposed to rain or water.

    D. If the product does not operate normally when the operating instructions are followed. Adjust only those controls that are covered by the operating instructions, since improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to normal operation.

    E. If the product has been dropped or the cabinet has been damaged.

    F. If the product exhibits a distinct change in performance, indicating a need for service.

Contents

Introduction

Your new Epson 24-pin dot matrix printer combines a compact design and high performance with a wide range of features.

Features

In addition to the high-quality printing and ease of operation you have come to expect from Epson printers, your printer offers the following:

- Easy paper handling, featuring automatic single sheet loading
- Fast draft mode printing of up to 192 characters per second at 12 cpi
- Seven built-in Letter Quality fonts for producing high-quality documents
- A convenient control panel design that allows direct selection of fonts
- Two paper slots (rear and bottom) for using a variety of paper types
- Compatibility with the Epson ESC/P® commands used by other Epson LQ printers.

Options

You may choose a cut-sheet feeder or a film ribbon to enhance use of your printer. For information on these options, see Chapter 4.

- **Single-bin Cut-Sheet Feeder (#** 7341)

  The cut-sheet feeder gives you easier and more efficient handling of single-sheet paper. It automatically feeds up to 100 sheets of standard bond paper into the printer.

- **Film Ribbon Cartridge (# 7768)**

An optional film ribbon cartridge provides you with even higher quality printing than the standard fabric ribbon.

Finding Your Way Around

This manual provides fully illustrated, step-by-step instructions for setting up and operating your printer.

- Chapter 1 contains information on unpacking, setting up, testing, and connecting the printer. Be sure to read this chapter first.
- Chapters **2** and 3 include important information on paper handling and day-to-day operation of your printer.
- Chapter **6** contains troubleshooting information. If the printer does not operate properly or the printed results are not what you expect, see Chapter **6** for a list of problems and solutions.
- Other chapters contain information on general maintenance, specifications, and printer commands. There is also a glossary of printer terms and an index.

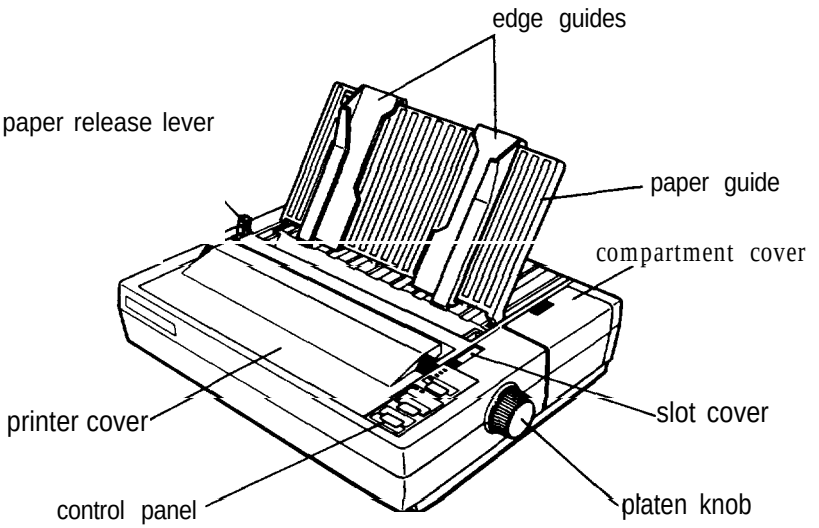
Warnings, Cautions, and Notes

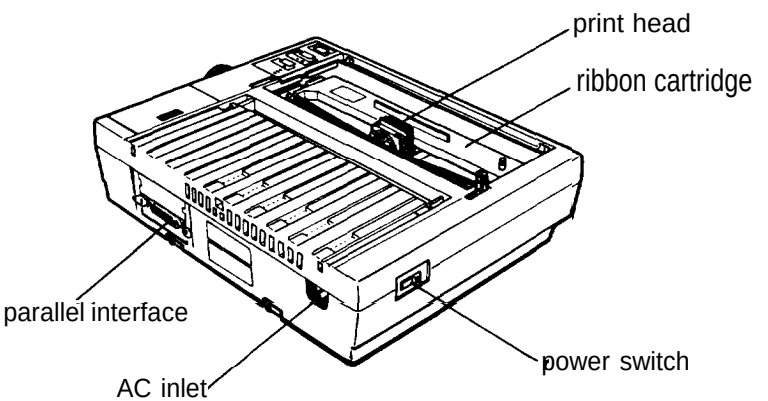
WARNINGS must be followed to avoid bodily injury.

CAUTIONS must be observed to avoid damage to your equipment.

Notes contain important information and useful tips on the operation of your printer.

Name of the Parts





Note: In some locations, the power cord is attached to the printer.

Where to Get Help

A network of authorized Epson Customer Care Centers throughout the United States offers customer support and service for Epson products. Epson America provides product information and support to its dealers and Customer Care Centers.

Call the Epson Consumer Information Center at **1-213-782-2606** for the following referrals:

- Your nearest Epson dealer
- The nearest Customer Care Center for parts and service
- Technical assistance.

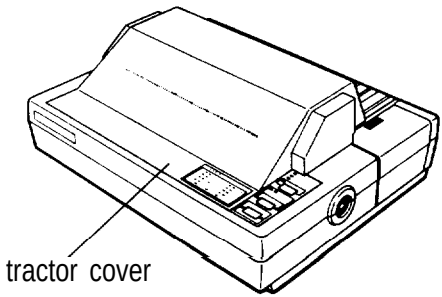
Chapter 1

Setting Up the Printer

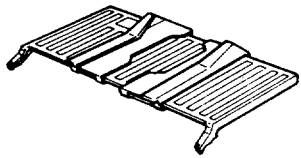
1

Unpacking the Printer

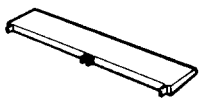
When you unpack the printer, make sure that you have all the parts shown below and that none has been damaged.



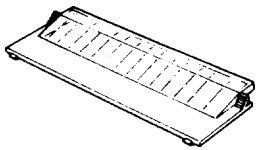
printer



paper guide



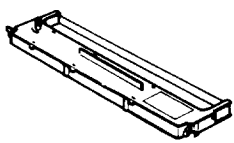
paper rest



printer cover

platen knob

power cord



ribbon cartridge

Selec Type sticker

Note:

- You'll find the platen knob in a piece of the foam packing.
- You'll find the SelecType sticker inside the user's manual. This sticker is a useful reference for selecting fonts with the control panel. You can put this sticker on either the printer cover or the front cover provided with the optional cut-sheet feeder.
- In some locations, the power cord is attached to the printer.

After removing the parts, store the packing materials in case you ever need to transport your printer.

CAUTION: There are several different versions of the printer designed for different electrical standards. It is not possible to adjust the printer for use at another voltage. The power supply type is shown on the label on the back of the printer. If it does not show the correct voltage for your country, contact your dealer.

Choosing a Place for the Printer

When selecting a place to set up your printer, be sure to keep the following in mind:

- Place the printer on a flat, stable surface.
- Place the printer close enough to the computer for the printer cable to reach.
- Leave adequate room around the printer to allow for easy operation and maintenance.

CAUTION: Avoid locations that are subject to direct sunlight, excessive heat, moisture, or dust.

- Use a grounded outlet; do not use an adapter plug.
- Avoid electrical outlets controlled by wall switches or automatic timers. Accidental disruption of power can wipe out information in the memory of your computer or your printer.
- Avoid outlets on the same circuit with large motors or other appliances that might cause fluctuations in line voltage.
- Keep the entire computer system away from potential sources of electromagnetic interference such as loudspeakers or the base units of cordless telephones.

Note: If you plan to use a printer stand, follow these guidelines:

- Use a stand that supports at least 30 lbs (14 kg), which is twice the weight of the printer.
- Never use a stand that tilts the printer at an angle of more than 15 degrees from horizontal. If you install a cut-sheet feeder, keep your printer absolutely level.
- If you position the paper supply below the printer stand, make sure that you allow enough clearance (one inch or 25 mm) to keep the paper from catching on the underside of the stand. Also see that the distance between the stands supports is at least 11 inches (280 mm), to accommodate any paper size you may use.
- Position your printer's power cord and interface cable so that they do not interfere with paper feeding. If possible, secure the cables to the printer stand.
- Position the paper stack even with the pull-tractor sprocket units, so that the paper has a straight path into the printer.

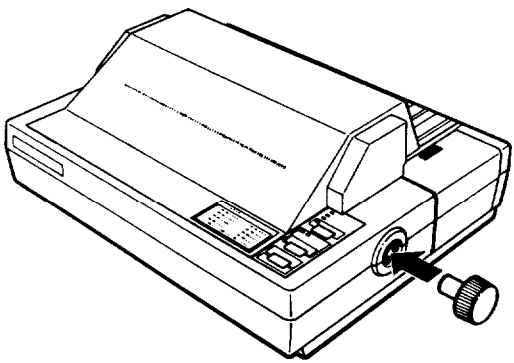
Assembling the Printer

After choosing a good place for your printer, you install the platen knob.

Installing **the platen knob**

You use the platen knob to manually feed paper in the printer when the printer is turned off. You find the platen knob packed in an indentation in the white foam packing material.

1. Insert the knob into the hole on the printer's side and rotate it until it slips onto the shaft.

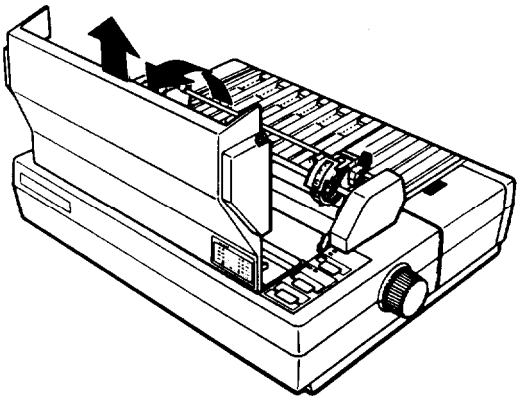


2. Push firmly on the knob until it fits against the printer case.

Installing the ribbon cartridge

Before installing the ribbon cartridge, make sure that the printer is not plugged into an electrical outlet.

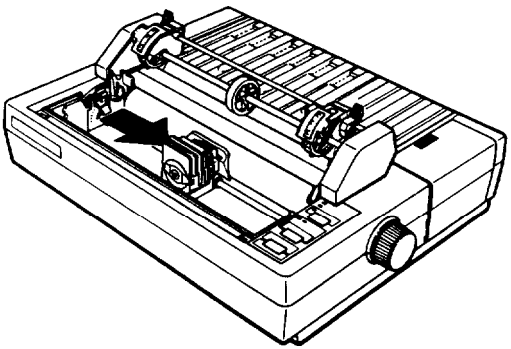
1. Raise the tractor cover to the upright position. Then lift the cover up and off.



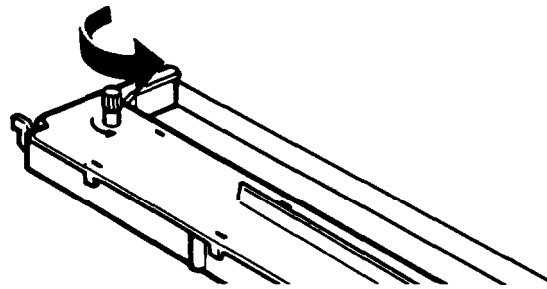
Note: Remove the packing material inserted between both sides of the tractor unit and the tractor cover. Be sure to store this material with the other packing materials.

CAUTION: Never move the print head while the printer is turned on because this can damage the printer. Also, if **you just used** the **printer,** the print head may be hot; let it cool for a few minutes before touching it.

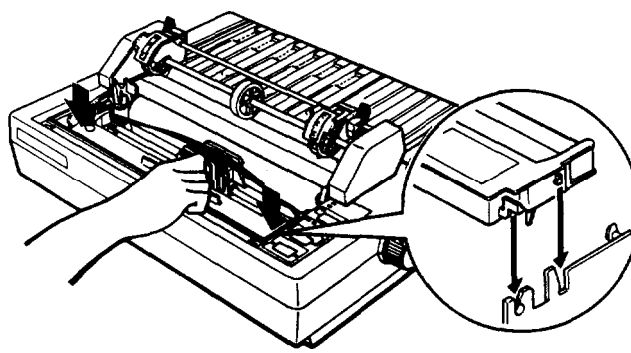
2. Slide the print head to the middle of the printer.



3. Turn the ribbon-tightening knob in the direction of the arrow. This removes any slack in the ribbon to make it easier to install.

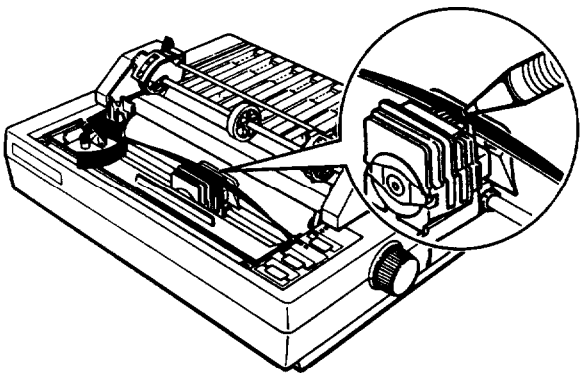


4. Hold the ribbon cartridge by its handle and push it firmly down into position, making sure the plastic hooks fit into the slots.



Press lightly on both ends of the cartridge to be sure the hooks are properly seated.

5. Use a pointed object, such as a ball point pen, to guide the ribbon between the print head and ribbon guide while you turn the ribbon-tightening knob to help feed the ribbon into place.



6. Slide the print head from side to side to be sure it moves smoothly. Also see that the ribbon is not twisted or creased.

Testing the Printer

Before connecting your printer to a computer, you use the built-in self-test function to see that the printer is working properly.

Before running the self test, you need to connect your printer to an electrical outlet and load paper.

Plugging in the printer

1. Make sure the printer is turned off.

2. Check the label on the back of the printer to make sure the power rating required by the printer matches that of your electrical outlet.

CAUTION: If the rated voltage and your outlet voltage do not match, contact your dealer for assistance. Do not plug in the power cord.

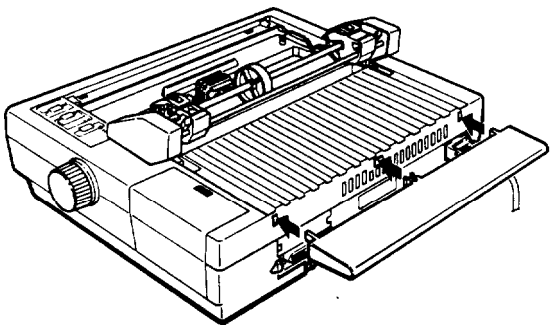
3. If the power cord is not attached to the printer, connect it to the AC inlet on the printer's rear panel.

4. Plug the power cord into a properly grounded electrical outlet.

Loading paper

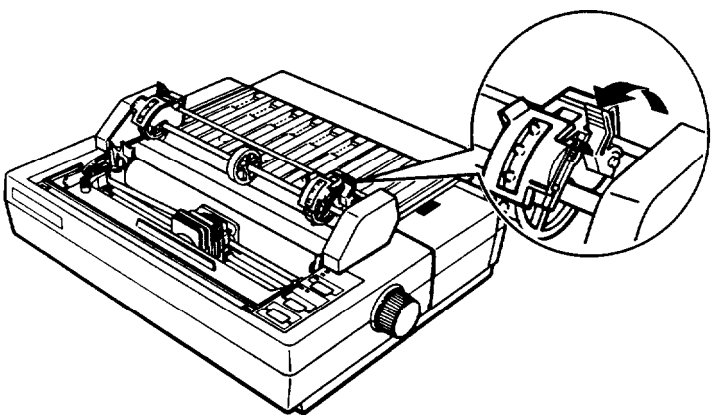
Next, you need to load paper. This section describes loading continuous paper. If you wish to use single sheets, see the section on using single sheets in Chapter 2.

1. Make sure the printer is turned off and that the paper release lever is in the continuous paper position. Attach the paper rest.

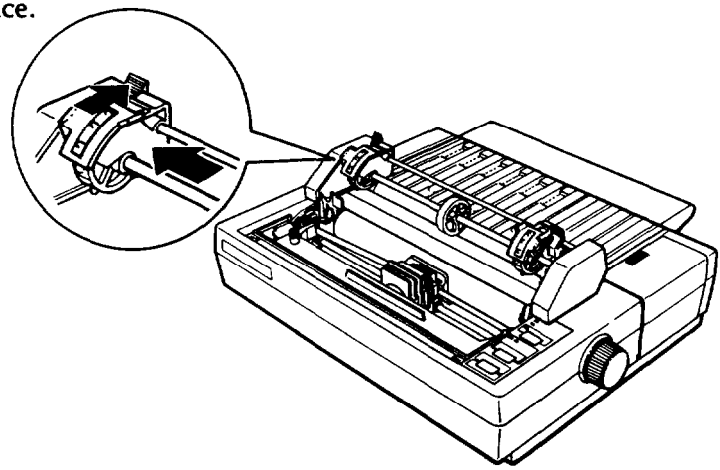


2. Slide the print head to the middle of the printer.

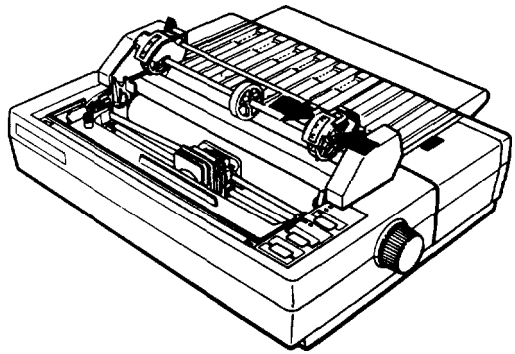
3. Release the sprocket units by pulling the sprocket locks forward.



4. Slide the left sprocket unit to approximately 0.5 inches **(12** mm) from the far left position and push the lever back to lock it in place.

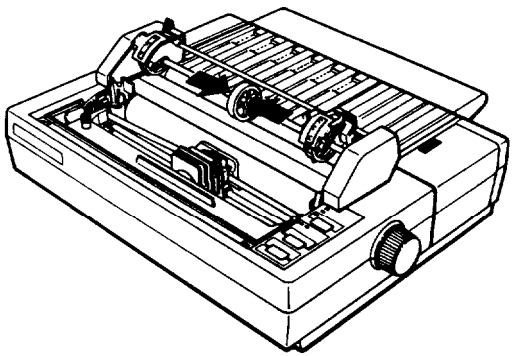


5. Slide the right sprocket unit to match the width of your paper, but do not lock it.

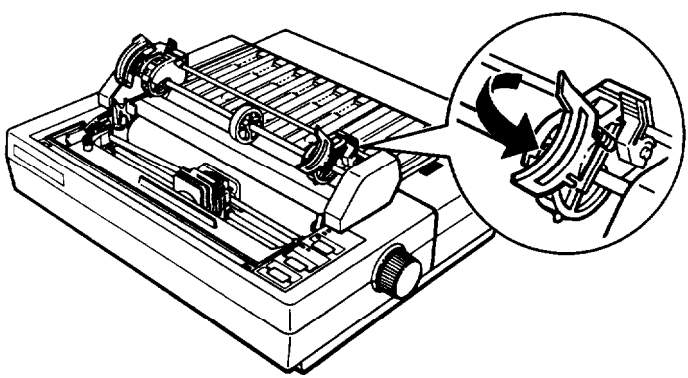


CAUTION: Use continuous paper wider than 8 inches (200 mm) for the self test; otherwise, the print head will print directly onto the platen, possibly damaging it.

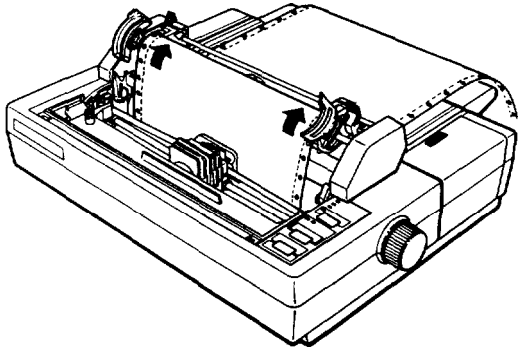
6. Position the paper support midway between the two sprocket units.



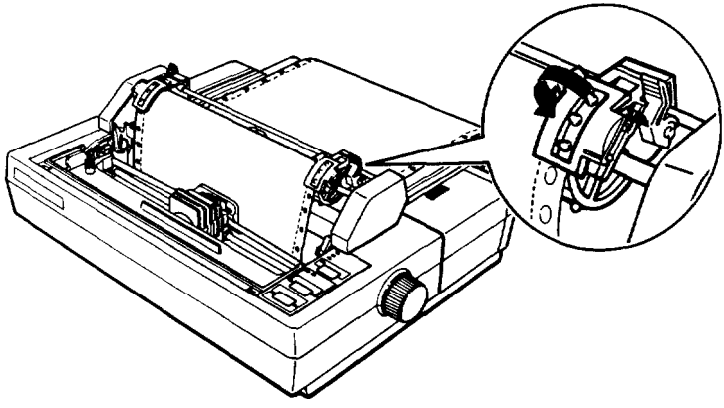
7. Open both sprocket covers.



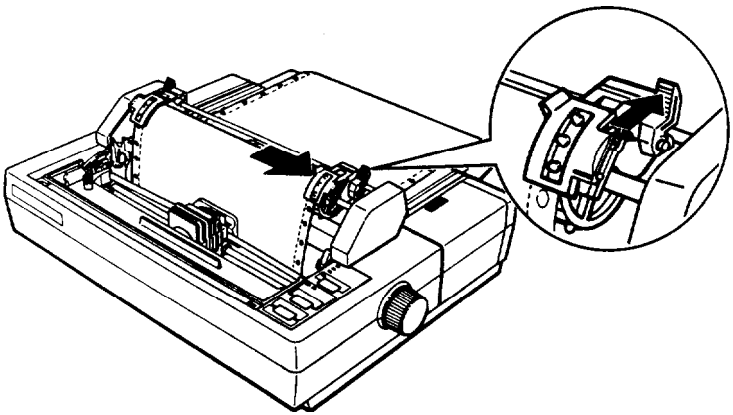
8. Make sure your paper has a clean, straight edge and then insert the paper into the printer until it emerges between the platen and the ribbon guide. Pull it up to the sprocket units.



9. Fit the holes of the paper over the tractor pins of the sprocket units, and then close the sprocket covers.

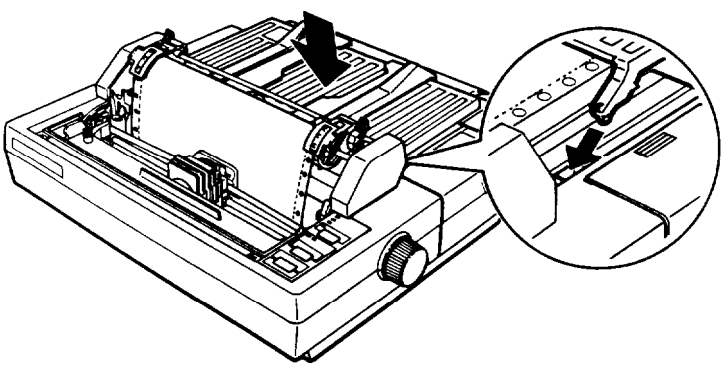


10. Slide the right sprocket unit to a position where the paper is straight and not wrinkled; then lock it in place.

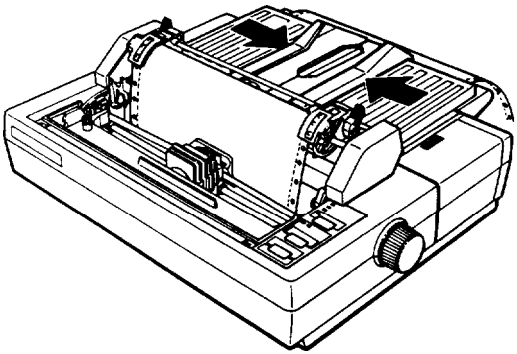


11. If there is slack in the paper between the print head and the tractor unit, use the platen knob to take up the slack.

12. To separate the incoming paper from the outgoing printed paper, attach the paper guide in its flat position over the printer and incoming paper.

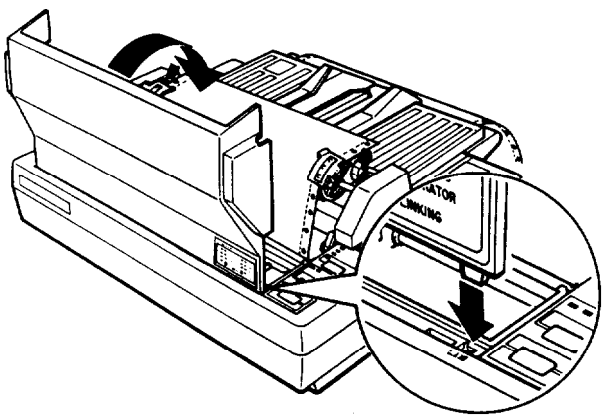


13. Slide the edge guides to the center of the paper's width.



14. Use the platen knob to feed the paper until its perforation is just about even with the top of the ribbon.

15. Attach and close the tractor cover.



Running the self test

The self test runs in draft mode or Letter Quality (LQ) mode, depending upon which button you hold down as you turn on the printer.

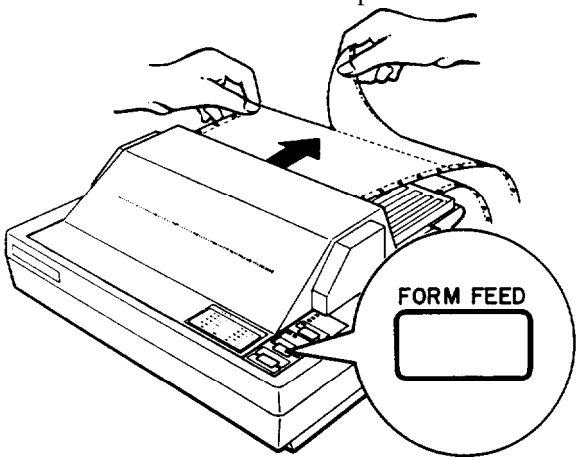
1. Make sure the printer is turned off and paper is loaded.
2. While holding down the LINE FEED button (draft mode) or the FORM FEED button (LQ mode), turn on the printer. After printing starts, release the button.

CAUTION: After turning the printer off, always wait at least five seconds before turning it back on. Turning the power on and off rapidly can damage the printer.

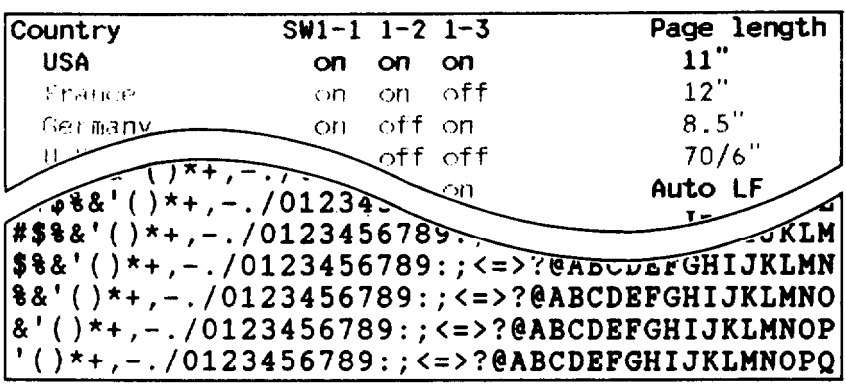
3. The self test continues until the paper runs out or you press the ON LINE button. When you wish to. stop the test, press the ON LINE button.

Note: To resume the test, press the ON LINE button again.

4. To end the self test, be sure the printer is not printing. Press the FORM FEED button to feed the paper forward and tear it off at the perforation. Then turn off the printer.



Here is part of a typical self test printed in Letter Quality mode.



Note: If the self test did not print satisfactorily, see Chapter 6.

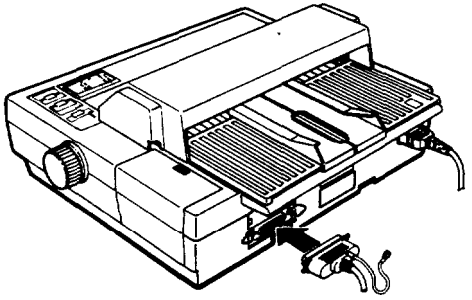
Connecting the Printer to Your Computer

If the self test printed correctly, you are ready to connect your printer to the computer. Most computers have a parallel interface. Check your computer's operating manual, if you are in doubt about your computer's interface. If it is parallel, use a suitable shielded cable to connect your computer to your printer's built-in parallel interface, as described in the next section.

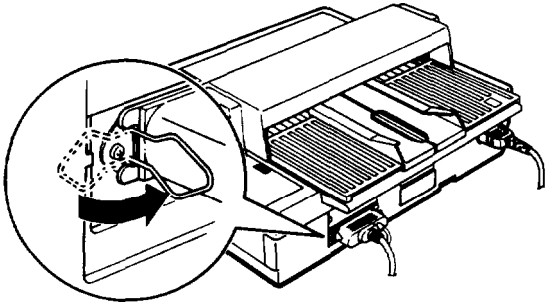
The parallel interface

Connect the parallel interface cable as described below:

1. Make sure both the printer and computer are turned off; then plug the cable connector securely into the printer.



2. Squeeze the wire clips together until they lock in place on either side of the connector.



Note: If your cable has a ground wire, connect it to the ground connector beneath the interface connector.

3. Plug the other end of the cable into the computer. (If there is a ground wire at the computer end of the cable, attach it to the ground connector **at** the back of the computer.)

Setting Up Your Application Software

Most application programs let you specify the type of printer you use so that the program can take full advantage of the printer's features. Many of these programs provide an installation or setup section that presents a list of printers.

Choosing from a menu

Because the family of Epson printers shares a great many commands, you can use an application program even if it does not list your printer on its printer selection menu. Choose from the following list (the printers are listed in the order of preference):

LQ-200
LQ-500
LQ-510
LQ-860(LQ-1060)
LQ-850(LQ-1050)
LQ-2550
LQ-2500
LQ-800(LQ-1000)
LQ-1500

If none of these printers is listed, select the first one available from the following list: LQ, EX, FX, LX, RX, MX, Epson printer, Standard printer, Draft printer.

To use ***all*** the features of your printer, however, it is best to choose a program with one of the LQ printers on its menu. If your program does not list one of these printers, contact the manufacturer to see if an update is available.

Chapter 2

Paper Handling

2

Using Single Sheets

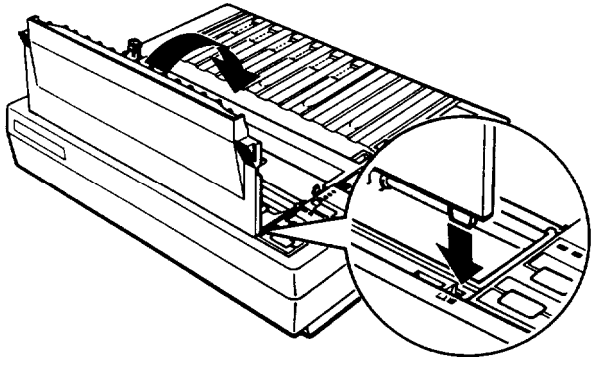
Your printer accommodates single sheets with widths from 7.2 inches (182 mm) to **10.1** inches (257 mm).

If the pull-tractor unit is installed, you need to remove it before you print on single sheets. See Removing the pull tractor in this chapter.

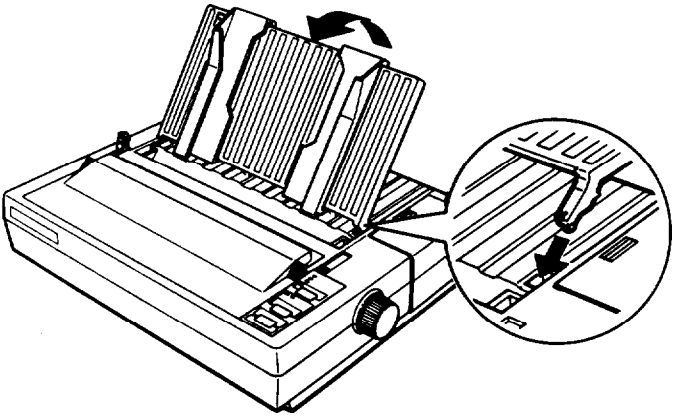
Attaching the paper guide

Follow these steps to attach the paper guide:

1. Attach the printer cover.

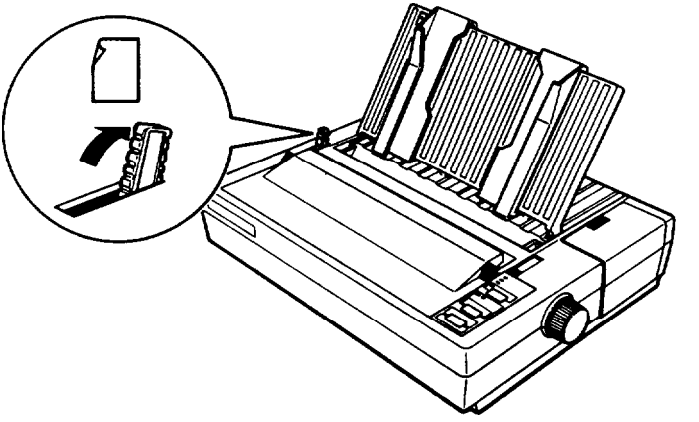


2. Place the paper guide on the printer. Then raise it up until it locks into place.



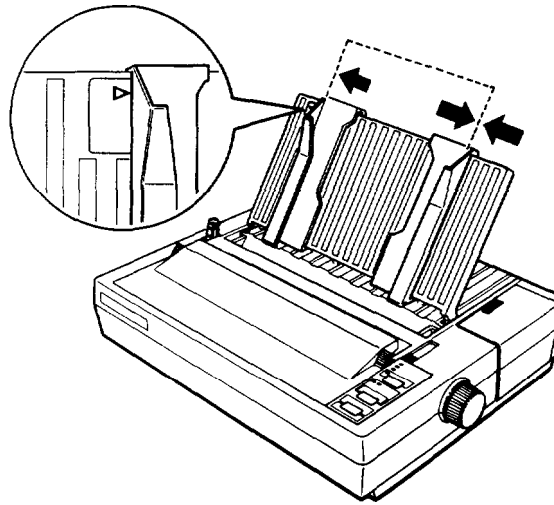
Loading the paper

1. Make sure the printer is turned off and then push the paper release lever back to the single sheet position.

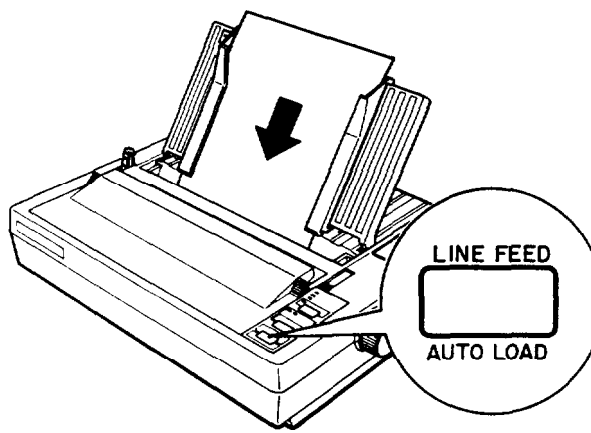


2. Turn on the printer. The POWER and PAPER OUT lights come on.

3. Slide the left edge guide until it locks in place at the guide mark. Next, adjust the right edge guide to match the width of your paper.



4. Slide the paper down firmly between the edge guides until it meets resistance. Then press the AUTO LOAD (LINE FEED) button once to load the paper.



Note: If the platen turns without loading the paper, completely remove the paper and reinsert it more firmly. Then press the AUTO LOAD button again.

CAUTION: Never advance the paper using the platen knob while the printer is turned on.

5. Press the ON LINE button to set the printer on line.

To eject the paper, set the printer off line (by pressing the ON LINE button) and then press the FORM FEED button.

Reloading during printing

When you print a document of more than one page using single sheet paper, there are two ways your software may leave your printer at the end of a page:

- If your software sends characters in a continuous stream, the printer stops printing when it reaches the bottom of the paper. When this happens, the page ejects and the ON LINE light goes off automatically.
- If your software handles printing page by page, it probably stops sending characters at the end of a page and prompts you to insert more paper. In this case, the ON LINE light may remain on. If it does, press the ON LINE button once to take the printer off line.

In either case, once the ON LINE light is off, remove the sheet that has just been printed and load a new sheet as before. Press the ON LINE button to start printing the next page.

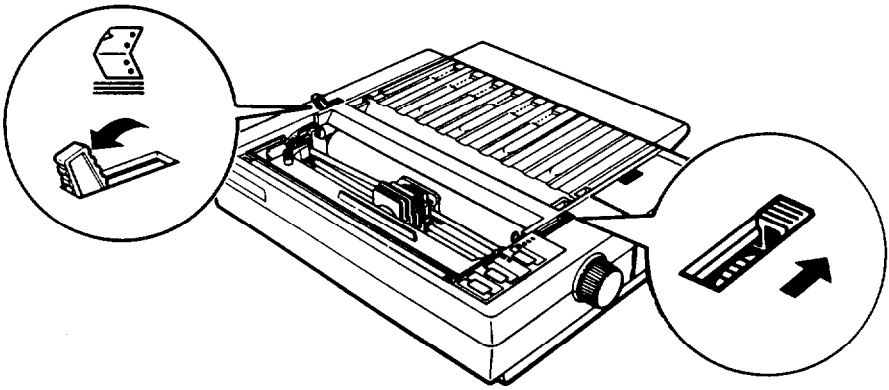
Using Continuous Paper

This printer's paper-handling system allows you to load continuous paper through either the rear or bottom paper slot depending upon your paper supply location.

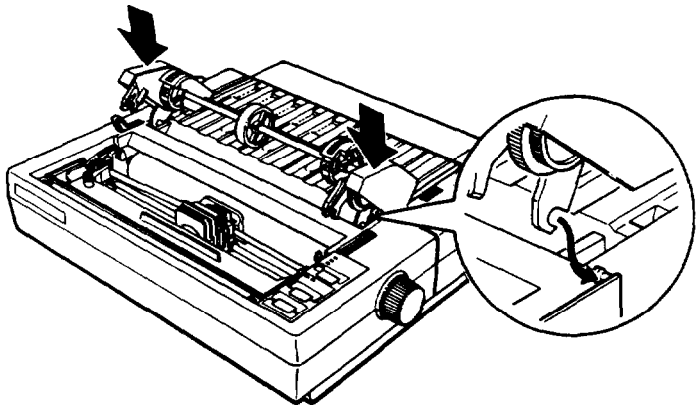
To print **on** continuous paper, you need to install the pull-tractor unit. If the pull tractor is already installed, skip to Positioning your continuous paper supply later in this section.

Installing the pull tractor

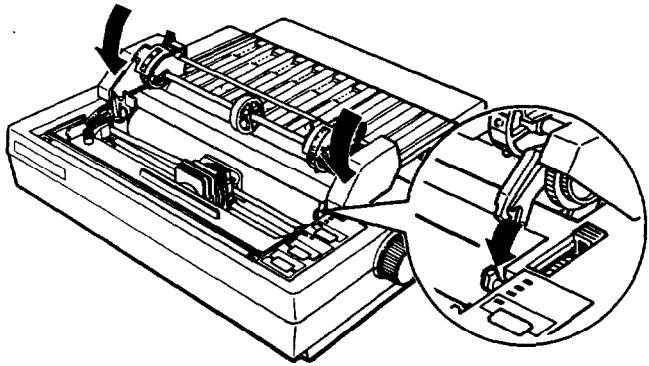
1. Turn off the printer and remove the printer cover and paper guide.
2. Attach the paper rest to the rear of the printer.
3. Pull the paper-release lever forward to the continuous-paper position. Open the slot cover for the tractor unit.



4. Fit the rear notches of the tractor unit over the rear mounting pins of the printer.



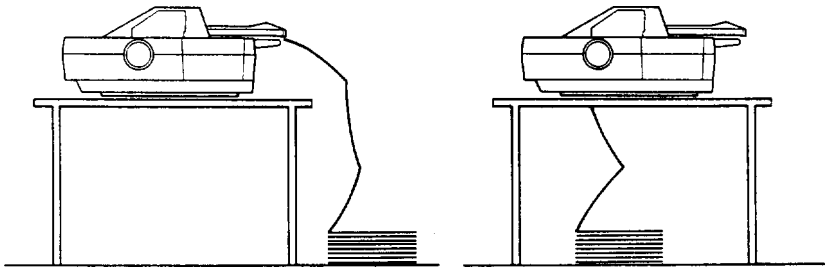
5. Press the tractor unit forward until its front notches lock onto the front mounting pins of the printer.



Positioning your continuous-paper supply

If you want to load paper through the bottom paper slot of the printer, use a printer stand that has an opening for paper to run through from the paper supply to the bottom paper slot.

Here are two ways to position your printer and supply of continuous paper:



Make sure you align your paper supply with the paper loaded in the tractor so that the paper feeds smoothly into the printer.

Loading continuous paper

1. Make sure the printer is turned off. Slide the print head to the middle of the printer.

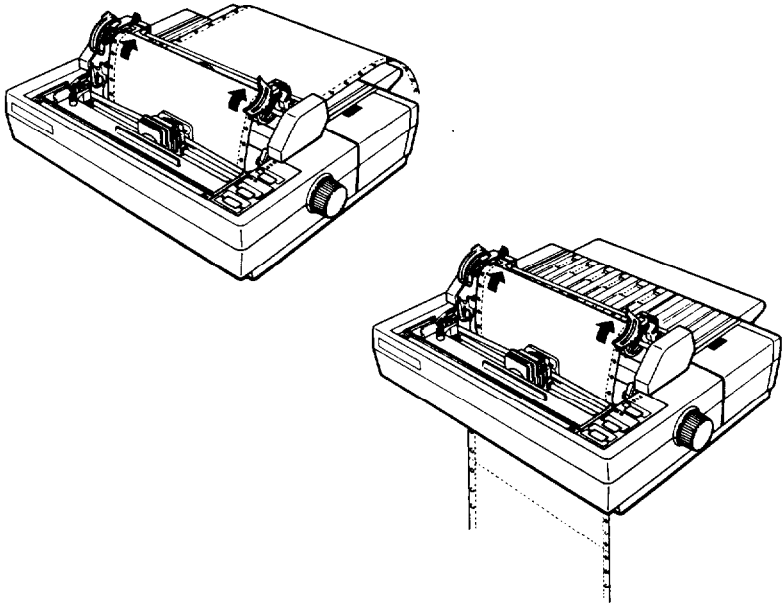
WARNING: If the printer was used recently, the print head may be hot. Let it cool before attempting to move it.

2. Release the sprocket units by pulling the sprocket locks forward.

3. Slide the left sprocket unit to approximately 0.5 inches (12 mm) from the far left position and push the lever back to lock it in place. Then slide the right sprocket unit to match the width of your paper, but do not lock it.

4 Position the paper support midway between the two sprocket units. Open both sprocket covers.

5 Make sure your paper has a clean, straight edge. Then insert the paper into the desired paper slot (rear or bottom) until it emerges between the platen and the ribbon guide. Pull the paper up to the sprocket units.



6. Fit the holes of the paper over the tractor pins of the sprocket units, and then close the sprocket covers.

7. Slide the right sprocket unit to a position where the paper is straight and not wrinkled; then lock it in place. If there is slack in the paper between the print head and the tractor unit, use the platen knob to take up the slack.

8. To separate the incoming paper from the outgoing printed paper, attach the paper guide in its flat position over the printer and incoming paper. Then slide the edge guides to the center of the paper's width.

9. Use the platen knob to feed the paper until its perforation is just about even with the top of the ribbon.

10. Attach and close the tractor cover.

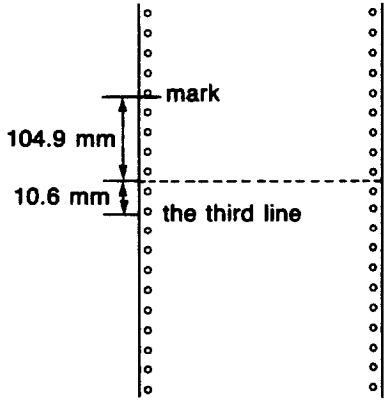
11. Turn on the printer.

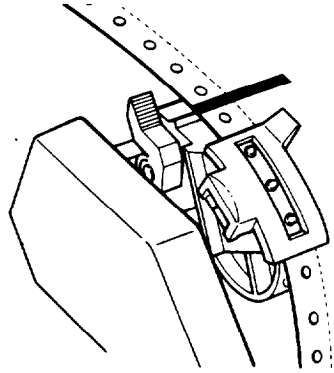
CAUTION: If you use the platen knob to feed the paper *after* turning on the printer, the printer loses track of the top-of-form position. Be sure to press the LINE FEED or FORM FEED button to feed paper.

Setting the top of form position

You may need to set the top of the form to a certain position for printing on ready-made forms.

To set the top-of-form position at the third line of the paper, for example, mark the paper 4.1 inches (105 mm) above the perforation. Then load the paper and align this mark with the mark on the tractor unit, as shown below. The third line (0.42 inches or **10.6** mm) below the perforation becomes the top-of-form position.

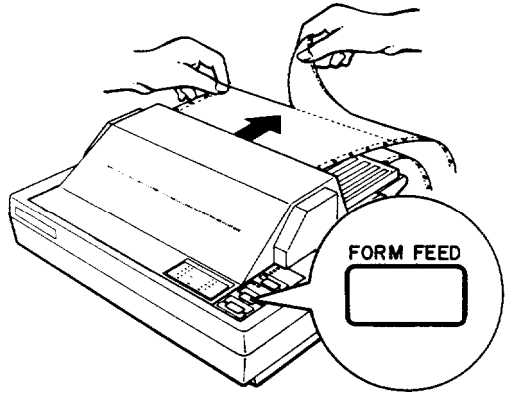




You may have to experiment with setting the top of form position several times to get this adjustment just right.

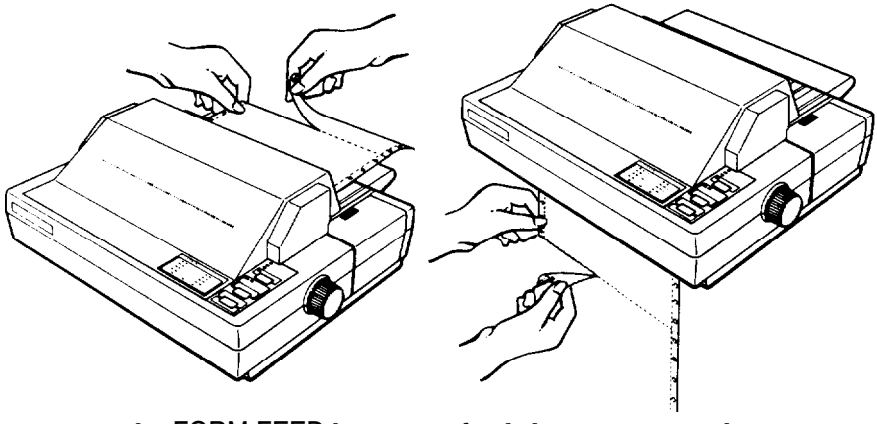
Removing the pull tractor

1. If you have a printed document still in the printer, set the printer off line and press the FORM FEED button to feed the paper forward. Then tear off the document at the perforation.



2. Remove the paper guide.

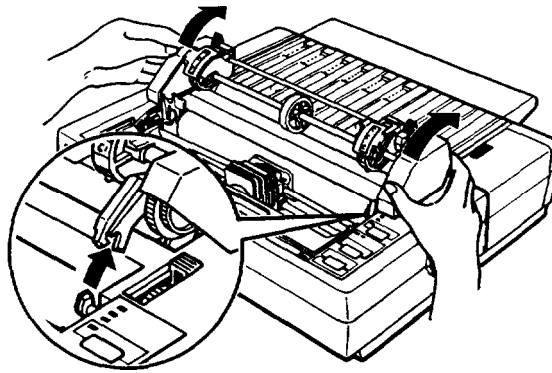
3. Tear off the fresh supply at the perforation past the rear paper slot or below the bottom paper slot.



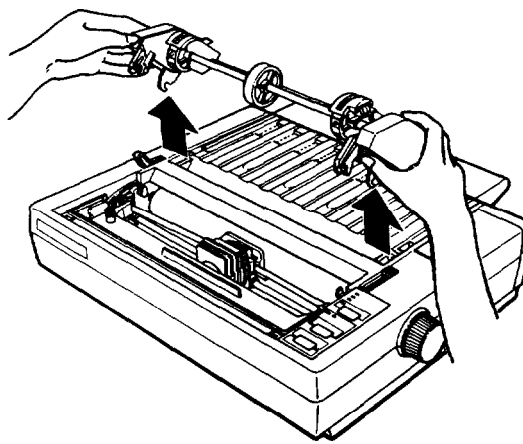
4. Press the FORM FEED button to feed the paper past the tractor pins. If paper remains in the tractor unit, press the FORM FEED button again.

5. Remove the tractor cover.

6. Hold both ends of the tractor unit and slowly tilt the unit back until the front notches of the unit are free.



7. Lift the tractor unit up and off.



8. Close the slot cover.

9. Install the paper guide and printer cover. Push the paper release lever to the single sheet position.

Printing on Special Paper

In addition to printing on single sheets and continuous paper, your printer can also print on a wide variety of paper types, such as labels and multi-part forms. Before printing on special types of paper, you may need to change the paper-thickness setting.

CAUTION: When printing on labels or multi-part forms, make sure that your application program settings keep the printing entirely within the printable area.

Always ***return*** the lever to position 2 when you go back to printing on ordinary paper.

The paper-thickness lever

Change the position of the paper-thickness lever as follows:

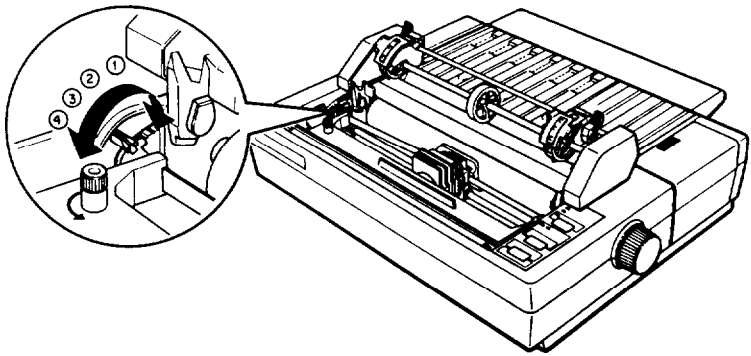
1. Turn off the printer.

2. Remove the tractor cover or the printer cover.

WARNING: If the printer was used recently, the print head may be hot. Let it cool before attempting to move it.

3. Slide the print head to the middle of the printer.

4. Set the paper-thickness lever to match the thickness of your paper according to the table below.



Paper Type	Lever Position
Ordinary (single sheets or continuous)	2
Thin paper	2 or 1
Multi-part paper	
2 sheets (original + 1 copy)	3
3 sheets (original + 2 copies)	4
Labels	4

Note: If the lever is set to position 4, the printing speed is reduced.

5. Attach the tractor cover or printer cover.

Multi-part forms

With the pull-tractor unit installed, your printer can print on continuous multi-part forms. You can use multi-part forms of up to three parts (including the original). Make sure you set the paper-thickness lever to the proper position using the table above.

Except for the paper-thickness setting, you load multi-part paper the same way as continuous paper. For details, see the section on loading continuous paper in this chapter. Pay special attention to setting the top-of-form position.

CAUTION:

- Do not use multi-part forms with the single-sheet feeding system.
- When printing multi-part forms, make sure the printing stays entirely within the printable area of the forms.

Labels

When printing labels, always choose the type mounted on a continuous backing sheet with sprocket holes for use with a tractor. Do not try to print labels as single-sheets because labels on a shiny backing sheet almost always slip a little.

Load labels from the bottom paper slot only. You load labels the same way that you load continuous paper except that the paper-thickness lever must be adjusted for printing labels. See the section on loading continuous paper in this chapter for details. For the correct paper-thickness setting, see the table on page **2-15.**

CAUTION:

- Never feed labels backward through the printer. Labels can easily peel off the backing and jam the printer.
- Since labels are especially sensitive to temperature and humidity, use them only under normal operating conditions.
- Do not leave labels loaded in the printer between jobs; they curl around the platen and may jam when you resume printing.

Chapter 3

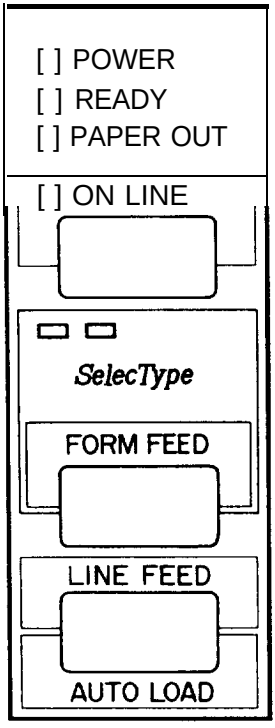
Using the Printer

3

Operating the Control Panel

The indicator lights give you the current status of the printer. The buttons let you control many of the printer settings.

Lights



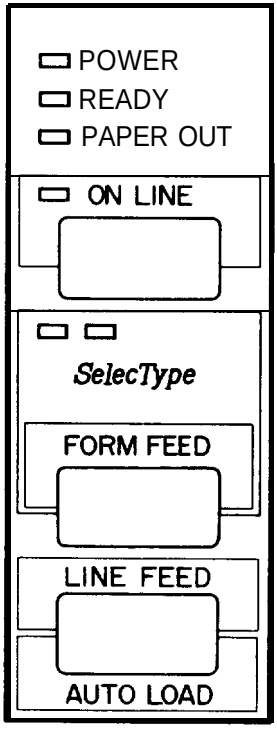
POWER (green)
On when the power switch is on and power is supplied.

READY (green)
On when the printer is ready to accept data. This light flickers during printing.

PAPER OUT (red)
On when the printer is out of paper.

ON LINE (green)
On when the printer can receive and print data from the computer. If this light flickers, the print head is overheated. In this case, the printer waits until the print head cools and then resumes printing.

Buttons



ON LINE

This button controls the printer's on line/off line status. When the printer is on line, the ON LINE light is on and the printer can receive and print data from the computer.

FORM FEED

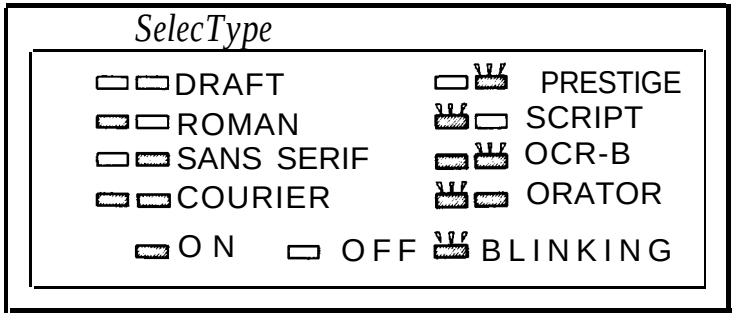
When the printer is off line, press this button to eject a single sheet of paper or advance continuous paper to the top of the next page. When the printer is on line, press this button to select the character font. See the section in this chapter on selecting a font with SelecType.

LINE FEED/AUTO LOAD

When the printer is off line and paper is loaded, press this button to feed the paper one line, or hold it down to feed paper continuously. To load single-sheet paper, the printer must be off line and the PAPER OUT light on. Then insert a sheet of paper and press the AUTO LOAD button.

SelecType

When the printer is on line, the FORM FEED button is used to select the character font. The two orange indicator lights show which font is currently selected. (See the description on the tractor cover label or the SelecType sticker.) You can put the SelecType sticker on the printer cover or the front cover provided with the optional cut-sheet feeder. You'll find the sticker inside the user's manual.



Other control-panel features

The control panel also gives you access to several special functions.

Self test: The self test lets you check that your printer is operating properly and gives you a printout of the current DIP-switch settings. See the section on testing the printer in Chapter **1** for more information.

Data dump: The data dump mode allows advanced users to find the cause of communication problems between the printer and application programs. The data dump mode is explained at the end of this chapter.

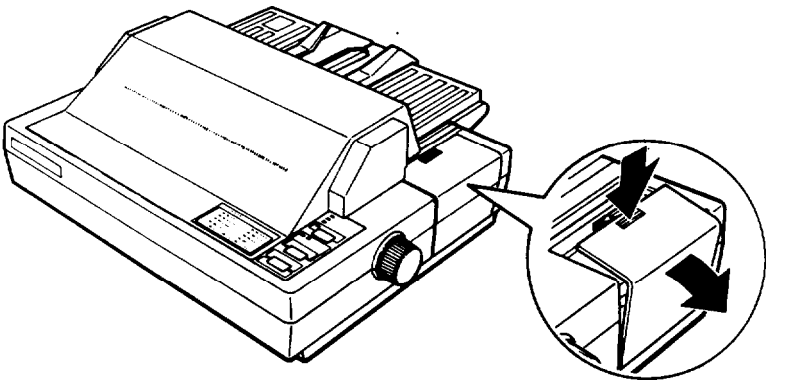
Setting the DIP Switches

By changing the settings of the two sets of DIP switches inside the compartment on the right top and side of the printer, you can control various printer features, such **as** the character set and page length. These new settings become effective whenever the printer is turned on, reset, or initialized.

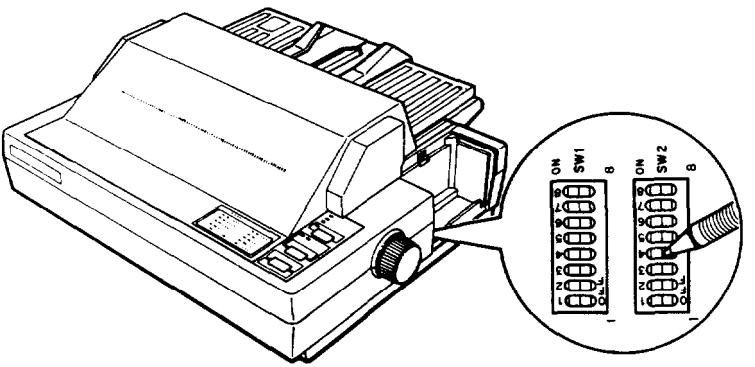
Changing a DIP-switch setting

1. Make sure the printer is turned off.

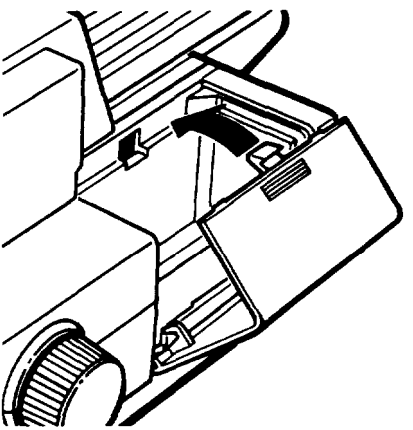
2. Remove the compartment cover.



3. Use a pointed instrument, such as the tip of a pen, to turn a switch on or off. The tables on the following pages give the DIP-switch functions for each setting.



4. Reattach the compartment cover.



The new DIP-switch settings take effect when you turn on the printer.

DIP-switch tables

The tables below show the settings for each DIP switch function. The currrent settings appear on your self test printout.

DIP Switch 1

SW	Description	ON	OFF	Page
1-1 1-2 1-3	International character set/ Graphics character set	SeeTable1,2		3-16 3-17
1-4 1-5 1-6	Font selection	Sea Table 3		3-12
1-7	Character table	Graphics	Italics	3-17
1-8	Cut-sheet feeder mode	ON	OFF	4-2

DIP Switch 2

SW	Description	ON	OFF	Page
2-1 2-2	Page length/CSF page length	See Table 4, 5		3-10
2-3	Auto line feed	ON	OFF	3-10
2-4	Input buffer capacity	8 Kbytes	1 Kbyte	3-10
2-5	Print direction for graphics	Bidirectional with ESC U0	Unidirectional	3-11
2-6	Skip-over-perforation	ON	OFF	3-11
2-7 2-8	Character spacing	See Table 6		3-15

Table 1 international character sets (DIP switch 1-7 OFF)

Country	SW1-1	SW1-2	SW1-3	SW1-7
USA	ON	ON	ON	OFF
France	ON	ON	OFF	OFF
Germany	ON	OFF	ON	OFF
United Kingdom	ON	OFF	OFF	OFF
Denmark I	OFF	ON	ON	OFF
Sweden	OFF	ON	OFF	OFF
Italy	OFF	OFF	ON	OFF
Spain I	OFF	OFF	OFF	OFF

When DIP switch 1-7 is off, PC 437 (United States) is the default graphics character set.

Table 2 Graphics character sets (DIP switch 1-7 ON)

Graphics character set	SW1-1	SW1-2	SW1-3	SW1-7
PC 437 (United States)	ON	ON	ON	ON
PC 850 (Multilingual)	ON	ON	OFF	ON
PC 860 (Portugal)	ON	OFF	ON	ON
PC 863 (Canada-French)	ON	OFF	OFF	ON
PC 865 (Norway)	OFF	ON	ON	ON

Settings not shown above select PC 437 (United States).
When DIP switch 1-7 is on, USA is the default international character set.

Table 3 Font selection

Font	SW1-4	SW1-5	SW1-6
Epson Courier	OFF	OFF	OFF
Epson Roman	ON	OFF	OFF
Epson Sans Serif	OFF	ON	OFF
Epson Prestige	ON	ON	OFF
Epson Script	OFF	OFF	ON
OCR-B	ON	OFF	ON
Epson Orator	OFF	ON	ON
Epson Draft	ON	ON	ON

Table 4 Page length

Page length	SW2-1	SW2-2	SW1-8
11 inches	OFF	OFF	OFF
12 inches	ON	OFF	OFF
8.5 inches	OFF	ON	OFF
11.7 inches	ON	ON	OFF

When DIP switch 1-8 is off, A4 size (61 lines) is the default CSF page length.

Table 5 CSF page length

CSF page length	SW2-1	SW2-2	SW1-8
A4 size (61 lines)	OFF	OFF	ON
	OFF	ON	ON
Letter size (65 lines)	ON	OFF	ON
	ON	ON	ON

When DIP switch 1-8 is on, 11 inches is the default page length.

Table 6 Character spacing

Character spacing	SW2-7	SW2-8
10 cpi	OFF	OFF
12 cpi	ON	OFF
17 cpi	OFF	ON
20 cpi	ON	ON

DIP switch functions

This section describes the different features you can control with the printer's DIP switches.

Page length and CSF page length

When DIP switch **1-8** is off (cut-sheet feeder mode is off), DIP switches 2-1 and 2-2 let you select **a** page length of 8.5 inches (216 mm), 11 inches (279 mm), **11.7** inches (296 mm), or 12 inches (305 mm).

When DIP switch 1-8 is on (cut-sheet feeder mode is on), you can select the CSF (Cut-Sheet Feeder) page length of A4- or Letter-size paper by setting DIP switches 2-1 and **2-2.**

Auto line feed

When auto line feed is on (DIP switch **2-3** on), each carriage return code (CR) is automatically accompanied by a line feed code (LF). If your printer is double spacing, turn the DIP switch off. If each line overprints the next, turn the DIP switch on.

Input buffer capacity

The input buffer stores data from your computer. If you want to free your computer for other tasks while the printer prints, change the setting to 8 Kbytes (DIP switch 2-4 on). Before defining user-defined characters, however, be sure to return the setting to 1 Kbyte (DIP switch **2-4** off).

Print direction for graphics

The printer ordinarily prints text bidirectionally for speed and prints graphics characters unidirectionally for precise vertical alignment. You can, however, change text printing to unidirectional with the software command ESC Ul.

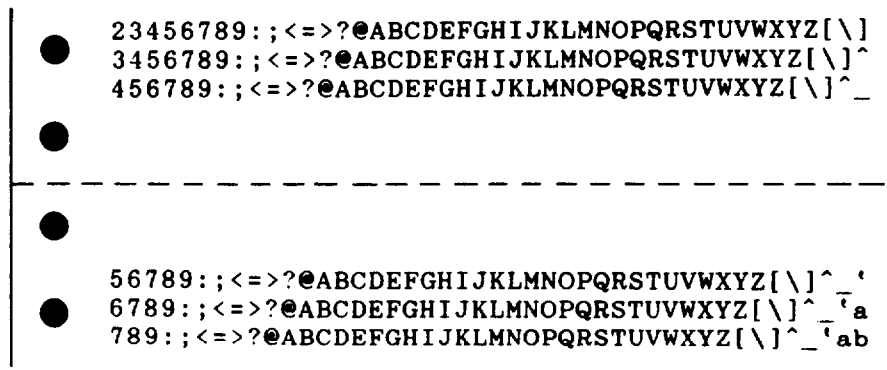
If you want to increase printing speed, you can change graphics character printing to bidirectional by turning DIP switch 2-5 **on** *and* sending the ESC U0 command. If DIP switch 2-5 is off, graphics character printing is unidirectional whether or not ESC U0 is used.

Skip-over-perforation

DIP switch 2-6 controls **the** skip-over-perforation function. If this switch is **on** when you are using continuous paper, the printer leaves a **one-inch** (25.4-mm) space between the last printed line on one page and the first printable line on the next page so that the printer skips over the perforation.

Most application programs take care of the top and bottom margins. Do not turn on skip-over-perforation unless your program does not provide these margins.

If you adjust your top-of-form position to the proper point, you can get half of the space at the bottom of one page and half at the top of the next page, as shown below.



Selecting Typestyles

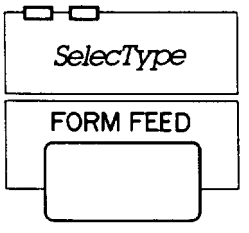
You can produce a wide range of typestyles by combining different character fonts, widths, and other enhancements. You can select typestyles using the SelecType feature on your control panel, the DIP switches, or software commands.

Character fonts

Your printer has eight built-in character fonts. To select a font using SelecType, follow these steps:

1. Be sure the printer is turned on and the ON LINE light is lit. Check to see that the printer is not receiving data (the READY light should not be flickering).

2. Press the FORM FEED button until the two SelecType lights match the desired font, as shown below.



DRAFT selected
ROMAN selected
SANS SERIF selected
COURIER selected
PRESTIGE selected
SCRIPT selected
OCR-B selected
ORATOR selected

off
on
blinking

The tractor cover label and the SelecType sticker list the state of the two orange indicator lights for each font. You can put the SelecType sticker on either the printer cover or the front cover provided with the optional cut-sheet feeder.

The font selected by SelecType remains effective until another font is selected by a software command or until the printer is turned off, reset, or initialized. Epson Courier is the default.

Draft mode uses fewer dots per character for high-speed printing, which makes it ideal for rough drafts and editing work.

Other SelecType settings are Letter Quality (LQ) fonts. Letter Quality takes a little longer to print but produces fully-formed characters for presentation-quality documents.

The following samples show the characters for each font.

Epson Draft

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
LMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
wxyz{|}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥P ƒáíó
úñÑªº¿⌐¬½¼¡«»
```

Epson Roman

```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
LMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
wxyz{|}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Pƒáíó
úñÑªº¿⌐¬½¼¡«»
```

Epson Sans Serif

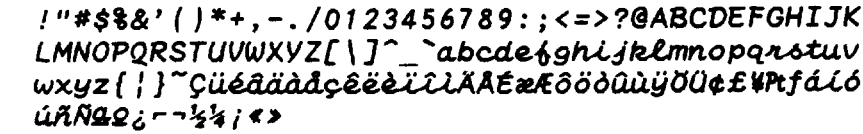
```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
LMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
wxyz{|}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Pƒáíó
úñÑªº¿⌐¬½¼¡«»
```

Epson Courier

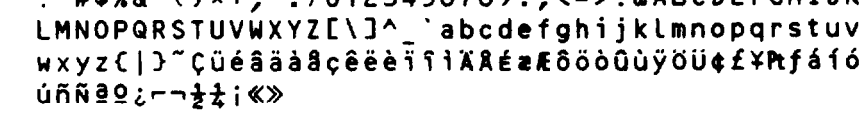
```
!"#$%&'()*+,-./0123456789:;<=>?@ABCDEFGHIJK
LMNOPQRSTUVWXYZ[\]^_`abcdefghijklmnopqrstuv
wxyz{|}~ÇüéâäàåçêëèïîìÄÅÉæÆôöòûùÿÖÜ¢£¥Pƒáíó
úñÑªº¿⌐¬½¼¡«»
```

Epson Prestige

Epson Script

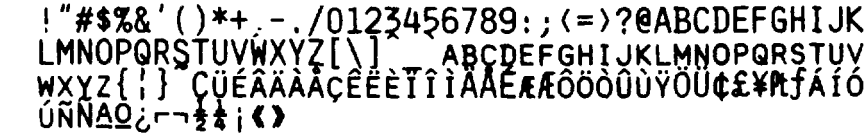


OCR-B



Note: The OCR-B font is read by an optical character reader (also known as a document reader or image scanner) for input into another computer. Print enhancements, such as bold and underlining, are not read by an optical character reader.

Epson Orator



Character spacing

For all of the eight built-in fonts, you can choose character spacing of 10, 12, 15, 17, or 20 cpi (characters per inch), or proportional spacing using the DIP switches or software commands.

In the 10, 12, 15, 17, and 20 cpi modes, each character gets an equal amount of space. In proportional mode, the spacing varies from character to character. A narrow letter like the lowercase i receives less space than the uppercase W.

The printout below compares the different types of spacing:

```
This is 10 cpi printing.
ABCDEFGHIJKLMNOPQRSTUVWXYZ

This is 12 cpi printing.
ABCDEFGHIJKLMNOFQRSTUVWXYZ

This is 15 cpi printing.
ABCDEPCHIJKLFINOPQRSTUVUXYZ

Thie is 17 cpi printing.
ABCDEFGHI JKLMNOPQRSTUVWXYZ

This is 20 cpi priding.
ABCDEFGHI JKLMNOPQRSTUVWXYZ

This is proportional printing.
ARCDEFGHIJKLMNOPQRSTIJVWXYZ
```

If you choose 15 cpi for Epson Roman, Epson Prestige, Epson Script, OCR-B or Epson Orator, 15 cpi Courier is printed.

Selecting an International Character Set

International character sets provide you with some characters and symbols used in other languages. The table below shows the eight international character sets you can select with DIP switches 1-1, 1-2, and 1-3 when DIP switch 1-7 is turned off. The table also shows the characters that differ in each set.

Country	ASCII code (hex)												DIP SW		
	23	24	40	5B	5C	5D	5E	60	78	7C	7D	7E	1-1	1-2	1-3
0 U.S.A.	#	$	@	[	\	]	^	`	{	¦	}	~	ON	ON	ON
1 France	#	$	à	°	ç	§	^	`	é	ù	è	¨	ON	ON	OFF
2 Germany	#	$	§	Ä	Ö	Ü	^	`	ä	ö	ü	ß	ON	OFF	ON
3 U.K.	£	$	@	[	\	]	^	`	{	¦	}	~	ON	OFF	OFF
4 Denmark	#	$	@	Æ	Ø	Å	^	`	æ	ø	å	~	OFF	ON	ON
5 Sweden	#	¤	É	Ä	Ö	Å	Ü	é	ä	ö	å	ü	OFF	ON	OFF
6 Italy	#	$	@	°	\	é	^	ù	à	ò	è	ì	OFF	OFF	ON
7 Spain I	₧	$	@	¡	Ñ	¿	^	`	¨	ñ	}	~	OFF	OFF	OFF

Note: If you wish to select an international character set when DIP switch 1-7 is turned on, use the ESC R command.

Besides the eight sets above, the six international character sets and the legal set shown below are also available through the ESC R command.

Country	ASCII code (hex)											
	23	24	40	58	5C	50	5E	60	78	7C	70	7E
8 Japan	#	$	@	[	¥	]	^	`	{	¦	}	~
9 Norway	#	¤	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
10 Denmark II	#	$	É	Æ	Ø	Å	Ü	é	æ	ø	å	ü
11 Spain II	#	$	á	¡	Ñ	¿	é	`	í	ñ	ó	ú
12 Latin America	#	$	á	¡	Ñ	¿	é	ü	í	ñ	ó	ú
13 Korea	#	$	@	[	₩	]	^	`	{	¦	}	~
64 Legal	#	$	§	°	'	"	¶	`	©	®	†	™

Choosing a Character Table

When DIP switch **1-7** is on, the graphics character tables are selected; when it is off, the italic character table is selected. The graphics character table selected depends on the settings of DIP switches **1-1, 1-2,** and **1-3.**

If you have an IBM@ or IBM-compatible computer, select a graphics character set when you wish to print character graphics as they are displayed on the screen. Even if you select a graphics character set, you can still print ordinary text and italics. For italics, see your software manual or the description of the ESC **4** command in the Command Summary, Chapter 8.

Character table	DIP SW 1-7
Italics	OFF
Graphics	ON

You can also select the italics character set or a graphics character set using the ESC t command. See the Command Summary in Chapter 8.

When DIP switch **1-7** is on, the graphics character table is determined by the DIP switch **1-1, 1-2,** and **1-3** settings.

Graphics character ***sets***

Graphics character set	SW1-1	SW1-2	SW1-3	SW1-7
PC 437 (United States)	ON	ON	ON	ON
PC 850 (Multilingual)	ON	ON	OFF	ON
PC 860 (Portugal)	ON	OFF	ON	ON
PC 863 (Canada-French)	ON	OFF	OFF	ON
PC 865 (Norway)	OFF	ON	ON	ON

Settings not shown above select PC 437 (United States)

The characters in each character set are shown in the Appendix.

Note:

- To change the setting of a DIP switch, first turn off the printer. Then change the DIP switch and turn the printer back on.
- Use of the ESC 6 or ESC 7 commands lets you select whether to print hex codes 90 to 9E and FF as characters (ESC 6) or control codes (ESC 7).

Data Dump Mode

Data dump mode is a special feature that allows experienced users to find the cause of communication problems between the **printer** and application programs. In data dump mode, the printer **produces** an exact printout of the codes it receives.

To use data dump mode, follow these steps:

1. Make sure that paper is loaded and the printer is off.

2. Hold down the FORM FEED and LINE FEED buttons and turn on the printer.

3. Next, run either an application program or a program you have written in any programming language. Your printer prints all the codes it receives in hexadecimal format, as shown below.

```
Data Dump  Mode

18 40 1B 52 00 1B 74 01 1B 36 12 18 50 20 20 20   .@.R..t..6..P
20 20 54 68 69 73 20 69 73 20 61 6E 20 65 78 61     This is an exa
6D 70 6C 65 20 6F 66 20 61 20 64 61 74 61 20 64   mplo of a data d
75 60 70 20 70 72 69 6E 74 6F 75 74 2E 20 54 68   ump printout. Th
69 73 20 69 73 20 66 65 61 74 75 72 65 20 6D 61   is is feature ma
68 65 73 20 69 74 20 65 61 73 79 20 66 6F 72 20   kes it easy for
```

4. To turn off data dump mode, press the ON LINE button to take the printer off line and then turn off the printer.

   By reading the characters printed in the text field on the right side of the data dump printout (see step 3) or the printout of hex codes, you can check which codes are being sent to the printer.

Chapter 4

Using the Printer Options

4

Cut-Sheet Feeder

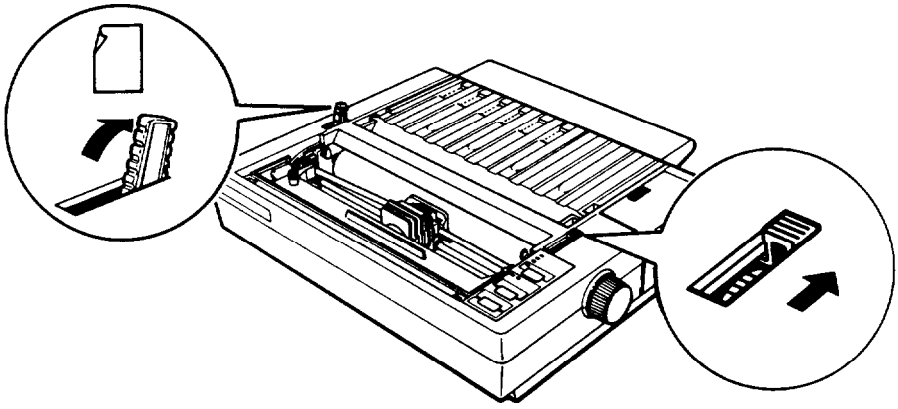
The optional cut-sheet feeder (# 7341) makes it possible to handle single sheets of paper more easily and efficiently. It automatically feeds up to **100** sheets of standard bond paper into the printer.

Installing the cut-sheet feeder

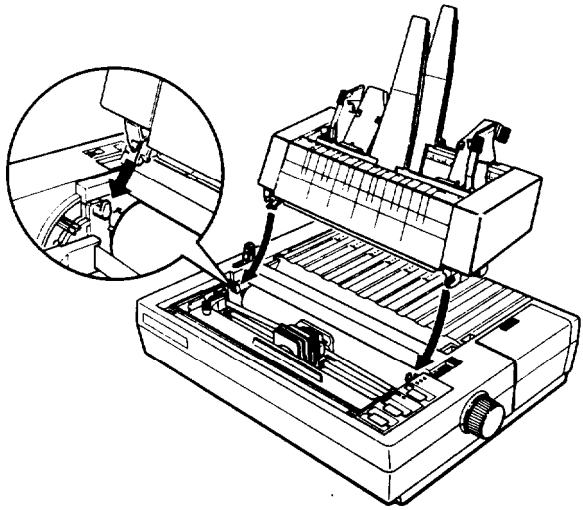
1. Make sure the printer is turned off. Remove the paper guide and printer cover. If the pull tractor is installed, remove it.

2. Turn on the cut-sheet feeder mode by setting DIP switch **1-8** on.

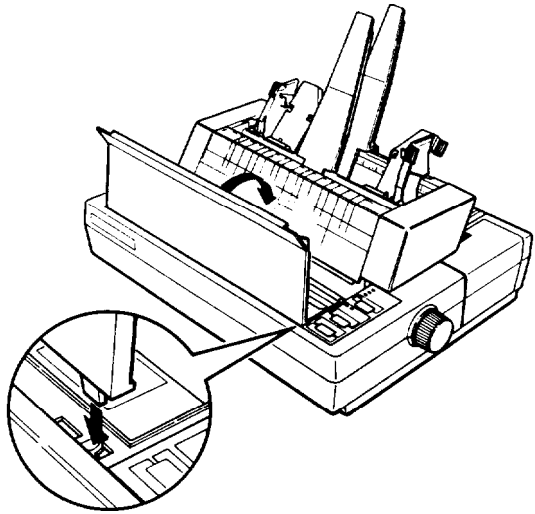
3. Push the paper-release lever back to the single sheet position and open the slot cover.



4. Hold the assembled cut-sheet feeder in both hands and fit its notches over the pins of the printer.



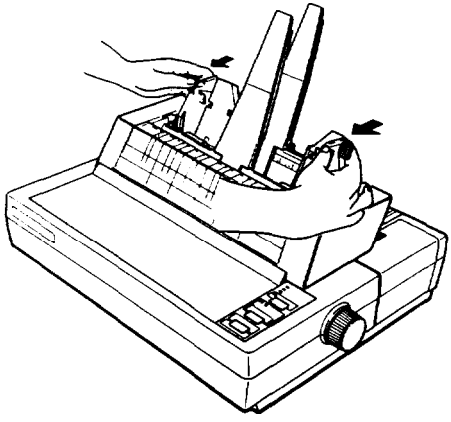
5. Two front covers are provided with the cut-sheet feeder. Attach the one for the **LQ-500.** The cut-sheet feeder manual tells which one this is.



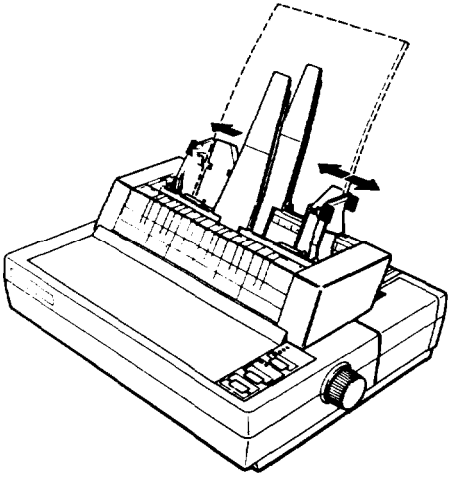
6. Turn on the printer.

Paper handling

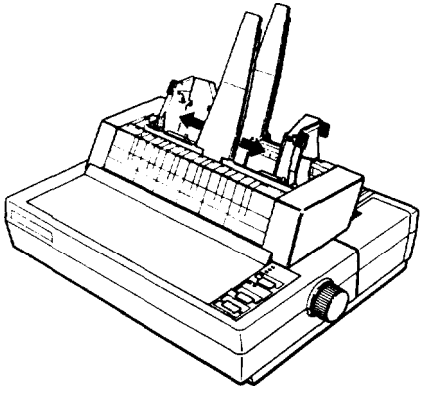
1. Pull the left and right rear tabs on the cut sheet feeder forward until the paper guides retract and lock open to allow for paper loading.



2. Slide the left paper guide all the way to the left. Next, slide the right paper guide to roughly match the width of your paper.



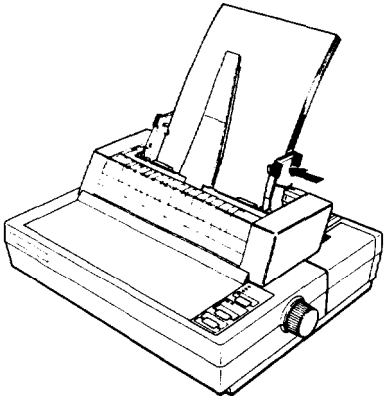
3. Move the front stacker support to the center of your paper's width.



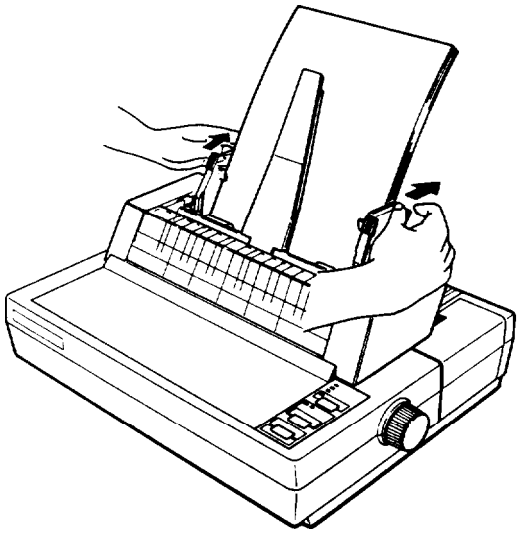
4. Take a stack of paper and fan it. Next, tap the side and bottom of the paper on a flat surface to even up the stack.

CAUTION: Do not use multi-part forms, carbon paper, or labels in the cut-sheet feeder.

5. Insert the paper along the left paper guide. Then, adjust the position of the right paper guide so that it closely matches your paper's width. Make sure that the position of the guide allows the paper to move freely up and down.



6. Push the rear tabs on both paper guides backward to clamp the paper against the guide rollers.

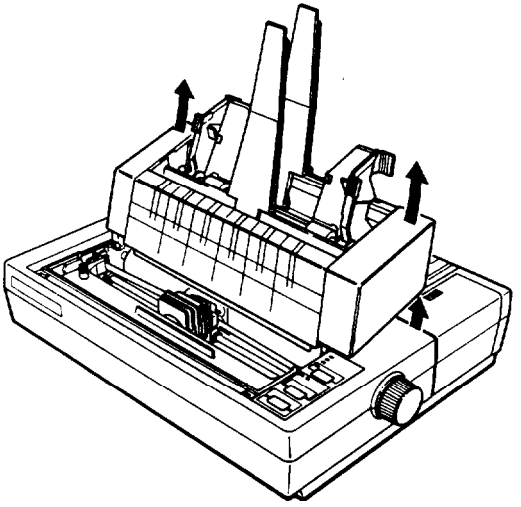


A new sheet of paper loads automatically whenever a printable character or line-feed command is ***sent*** to the printer while the ON LINE light is on.

> Note: Run the self test in cut-sheet feeder mode. The printer counts the number of lines on the page in 1/6-inch line spacing and prints out this number at the bottom of the first test page. This information is useful when using software to set a new page length.

Removing the cut-sheet feeder

1. Make sure that the printer is turned off. If any paper remains in the bin, remove it.
2. Remove the front cover.
3. Tilt the back section of the cut-sheet feeder forward to release its notches from the printer's pins and remove the cut-sheet feeder.



4. Turn off cut-sheet feeder mode by setting DIP switch 1-8 to off.

Film Ribbon

The optional film ribbon (#7768) provides you with even higher quality printing than the standard fabric ribbon.

Use the optional film ribbon only when you need especially high quality printing. For everyday operation, use the standard ribbon.

Install the film ribbon the same way you install the standard ribbon. See Chapter 1.

Chapter 5

Maintenance and Transportation

5

Cleaning the Printer

To keep your printer operating at its best, you should clean it thoroughly several times a year.

1. Make sure the printer is turned off. Then remove the paper guide, pull tractor unit, and any installed options.
2. Use a soft brush to carefully clear away all dust and dirt.
3. If the outer case or paper guide is dirty or dusty, clean it with a soft, clean cloth dampened with mild detergent dissolved in water. Keep the printer cover in place to prevent water from getting inside the printer.

CAUTION:

- Never use alcohols or thinners to clean the printer; these chemicals can damage the components as well as the case.
- Be careful not to get water on the printer mechanism or electronic components.
- Do not use a hard or abrasive brush.
- Do not spray the inside of the printer with lubricants; unsuitable oils can damage the mechanism. Contact your dealer or a qualified service person if lubrication is needed.

Replacing the Ribbon

When your printing becomes too faint, you need to replace the ribbon. The Epson # 7753 standard fabric or # 7768 film replacement ribbon cartridges are recommended. See Installing the ribbon cartridge in Chapter 1.

Note:

- Use the optional film ribbon only when you need especially high quality printing. For everyday operations, use the standard ribbon.
- Do not use ribbons designed for nine-pin printers.

Transporting the Printer

If you need to transport your printer some distance, carefully repack the printer using the original box and packing materials, as described below.

1. Turn off the printer.

2. Remove the paper guide and paper rest.

3. Unplug the power cord from the electrical outlet; then disconnect the interface cable from the printer.

4. Remove the ribbon cartridge and platen knob.

5. If you have removed the pull tractor and the tractor cover, replace them now according to the instructions in Chapter 2.

CAUTION: Never hold the printer by the compartment cover even if you are carrying the printer only a short distance. This cover could come off and cause you to drop the printer.

Chapter 6

Troubleshooting

Problems and Solutions

This chapter presents solutions to possible printer problems. If you have difficulty achieving the desired printing result, first locate the problem in the listing below and then see the appropriate page for the solution. If these solutions do not solve your problem, see Where to Get Help in the introduction.

Power supply

- Power is not being supplied. See **6-3.**

Printing

- The printer does not print. **See 6-4.**
- The print is faint or uneven. **See 6-5.**
- Dots are missing in the printed characters or graphics. **see 6-5.**
- Printed characters are not what you expect. **see 6-5.**
- The print position is not what you expected. **See 6-6.**

Paper handling

- Single sheets do not feed properly. see 6-8.
- Continuous paper does not feed properly. **see 6-9.**

Options

- When you use the cut-sheet feeder, the paper does not feed properly. see 6-10.

Power Supply

Power is not being supplied.

- ***The POWER light does not go on.***

  Check that the power cable is plugged into the electrical outlet properly.

  If the electrical outlet is controlled by an outside switch or automatic timer, use a different outlet.

  Plug another electrical device into the outlet to determine whether the outlet is operating properly.

- ***The POWER*** light ***comes on briefly and then goes off. The light stays off even when the power is turned on again.***

  Check that **the** printer's voltage rating matches the voltage of your electrical outlet. If the voltages do not match, unplug the printer and contact your dealer immediately. Do not reconnect the power cable to an electrical outlet.

Printing

The printer does not print.

- ***The ON LINE light is off.***

  Press the ON LINE button to put the printer on line.

- ***The ON LINE light is on but nothing is printed.***

  Check that the software is installed properly for your printer. Check the software's printer settings.

  Check both ends of the interface cable between the printer and the computer. Make sure your interface cable meets both the printer and computer specifications.

- ***The PAPER OUT light is on.***

  Load paper in the printer.

- ***The printer sounds like it is printing, but nothing is printed.***

  The ribbon cartridge may not be installed properly. See the section on ribbon installation in Chapter 1.

  The ribbon may be worn out. Replace the ribbon cartridge.

- ***The printer makes a strange noise, the buzzer sounds several times, and the printer stops abruptly.***

  Turn off the printer and check for paper jams or other problems. If the printer still does not print correctly, contact your dealer or a qualified service person.

- ***The ON LINE*** light ***is flickering but the printer does not print, or it stops printing abruptly.***

  The print head is overheated. Wait a few minutes; the printer resumes printing automatically when the print head cools.

The print is faint or uneven.

- ***Printed characters have parts missing at the bottom.***

  The ribbon cartridge **may** not be installed properly. See the section on ribbon installation in Chapter **1.**

- ***The printout is faint.***

  The ribbon may be worn out. Replace the ribbon cartridge.

  Check that the paper-thickness lever is set correctly for the paper you are using.

Dots are missing in the printed characters or graphics.

- ***A line of dots is missing in the printout.***

  The print head is damaged. Stop printing and contact your dealer or a qualified service person to have the printer serviced.

- ***Dots are*** missing ***in random positions.***

  There is either slack in **the** ribbon or the ribbon has **come** loose. Reinstall the ribbon cartridge.

Printed characters are not what you expect.

- ***The typestyle or characters that are set by your software cannot be printed.***

  Check that the software is correctly installed for your printer.

- ***The*** font ***is selected in your software, but the characters*** are ***printed in a different font.***

  Check that the correct font is selected in SelecType.

- ***The*** font ***selected by SelecType does not print.***

  Your software may be overriding your SelecType setting. Check the printing style set in your software.

- ***The wrong characters are printed.***

  The wrong character table or the wrong international character set may be selected. Check the DIP-switch settings. **See 3-16.**

The print position is not what you expected.

- ***Printing starts too high or too low on the page.***

  Adjust the top margin set by your application software.

- ***All the text is printed on the*** same line.

  Set DIP switch **2-3** on so that the printer automatically adds a line-feed code to each carriage return.

- ***The text is printed with an extra blank line in between.***

  Two line-feed signals are being sent. Set DIP switch 2-3 off.

- ***Page length does not match the length*** of ***the*** paper.

  Change the page-length setting with DIP switches **2-1** and **2-2. see 3-9.**

  Check the page length set by your application software and adjust it if necessary.

- ***Regular gaps occur*** in ***the printout.***

  One-inch skip-over-perforation may be set. Set DIP switch **2-6** off.

- Skip-over-perforation ***is set, but the perforation does not fall in the center*** of ***the skip.***

  Adjust the top of form position as described in Chapter 2.

  Make sure the DIP-switch settings match your required paper length. See 3-9.

  If your application program is setting the top and bottom margins, set DIP switch 2-6 off.

If the printer still does not print correctly, try the self test described in Chapter **1.** If the self test works properly, the printer is all right, and **the** problem probably lies in the computer, the software, or the cable. If the self test does not work, contact your dealer or a qualified service person.

Paper Handling

The following section guides you through problems in handling single sheets and continuous paper. If you are having problems using the optional cut-sheet feeder, see the section on options starting on **6-10.**

Single sheets do not feed properly.

- ***Printing starts too low on the page, or the bottom part*** of one ***page is printed at the top*** of ***the next page.***

  Be sure to choose the correct printer when you choose a printer from your application program's menu. See Chapter **1.**

  If possible, specify single **sheet** paper with your application software.

  Use your application software to reduce or eliminate the top margin and to reduce **the** page length.

- ***When you press the AUTO LOAD button, the platen does not rotate and paper does not feed.***

  If **the** ON LINE light is on, press the ON LINE button once to set the printer off line.

- ***When you press the AUTO LOAD button, the platen rotates but paper does not feed.***

  Check that the paper-release lever is pushed back to **the** single-sheet position.

- ***The paper** feed **is crooked** or **the paper jams.***

  The cut-sheet feeder mode may be turned on. Set DIP switch **1-8** off.

  Make sure **the** paper size is within the specified range. **see 7-3.**

- ***The paper does not fully eject.***

  See that the page-length setting is correct.

Continuous paper does not feed properly.

- ***The paper** feed **is crooked or the paper jams.***

  See that **the** paper-release lever is pulled forward to the continuous-paper position.

  Make sure **the** paper supply is not obstructed by a cable or some other object.

  Make sure that your paper supply is positioned within **3** feet **(1** meter) of the printer.

  The position of your paper supply may be preventing it from feeding straight.

  See that **the** holes on the sides of the paper are aligned with **each** other. Also, make sure the sprocket units are locked and their covers are closed.

  Check **that** the paper-thickness lever is set correctly for the paper you are using. See **2-15.**

  Check that the paper size is within the specified range. **see 7-3.**

Options

When you use the cut-sheet feeder, the paper does not feed properly.

- ***When a print*** command ***is sent from the computer, the platen*** rotates ***but paper does*** not ***feed.***

  Make sure DIP switch **1-8** is set on. See 3-7.

  The cut-sheet feeder may be incorrectly installed on the printer.

  See that the paper-release lever is pushed back to the single-sheet position. See 2-3.

  Paper may be jammed near the print head.

  You may have loaded too many sheets in the cut-sheet feeder's bin.

  There may be only one sheet left in the bin. Add more paper. See 4-4.

- ***Two or more sheets feed at the same time.***

  You may have loaded too many sheets in the cut-sheet feeder's bin.

  You may have forgotten to fan the stack of paper before loading it into the bin. Remove the paper and fan it.

- ***The paper feed is crooked.***

  The paper may be old or creased. Use only new, clean sheets of paper.

  There may be too much paper in the stacker.

  Make sure that your paper is the proper sire and quality.

- ***One page*** of ***printing has spread to two pages.***

  Check that the page-length setting is correct.

Chapter 7
Technical Specifications

7

Printer Specifications

Printing

Printing method: 24-pin impact dot matrix

Printing speed:

Quality	Character per inch	Characters/second/line
Draft	10	160
	12	192
Letter Quality	10	53.3
	12	64

Printing direction: Bidirectional logic-seeking for text. Unidirectional for graphics. (Bidirectional for graphics can be selected with DIP switch **2-5** and the proper software command.)

Line spacing: 1/6 inch, or programmable in increments of **l/180** inch

Paper feed speed: 100 ms/line at l/6-inch line spacing with intermittent feeding; 2.2 inches/second with continuous feeding.

Printable columns:

Character sizes	Maximum printed characters
10 cpi	80
12 cpi	96
15 cpi	120
17 cpi	137
20 cpi	160
Proportional	69 (maximum-width character) 160 (minimum-width character)

Buffer: 1 Kbyte or 8 Kbytes (DIP-switch selectable)

Character fonts:

Font	Available sizes (characters per inch)
Epson Draft	10, 12, 15, 17, 20
Epson Roman	10, 12, 15, 17, 20, proportional
Epson Sans Serif	10, 12. 15, 17, 20, proportional
Epson Courier	10, 12, 15, 17, 20, proportional
Epson Prestige	10, 12. 15, 17, 20, proportional
Epson Script	10, 12, 15, 17, 20, proportional
OCR-B	10
Epson Orator	10

Character tables: 96 standard ASCII characters, 14 international character sets, and a legal set, and 5 graphics character tables

Paper

Paper width:

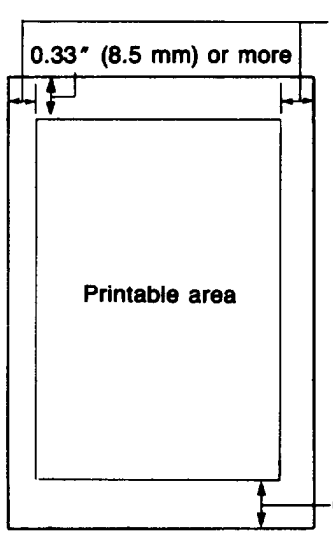
Single sheet
7.2 to 10.1 inches **(182** to 257 mm)
Continuous paper (including multi-part forms)
4.0 to 10.0 inches **(101** to 254 mm)
Labels (continuous only)
backing sheet: **4.0** to **10.0** inches **(101** to 254 mm)
label: **2 l/2** x **15/16** inches **(63.5** x 23.8 mm) minimum

Paper length:

Single sheet
14.3 inches **(364** mm) maximum

Printable area:

Single sheet

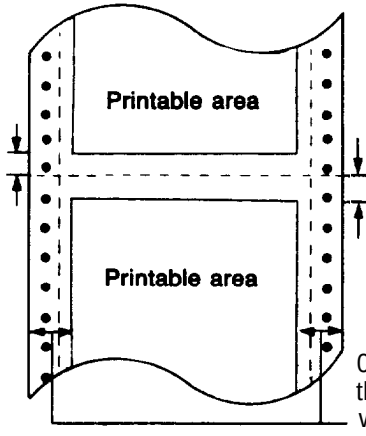


0.12" (3 mm) or more on paper that is 9" (229 mm) or less wide.

0.53" (13.5 mm) or more

The minimum right and left margins are 1.06" (27 mm) when printing on paper that is 10.1" (257 mm) wide.

Continuous paper



0.35" (9 mm) or more

0.35" (9 mm) or more

0.51" (13 mm) or more on paper that is 9.5" (242 mm) or less wide.

For 10" (254 mm) paper width, the left margin is 1.02" (28 mm) or more and the right margin is 0.94" (24 mm) or more.

Paper *thickness:*

Single sheets
0.0025 to 0.004 inches
(0.065 to 0.1 mm)
Continuous (including multi-part forms)
0.0025 to 0.01 inches
(0.065 to 0.25 mm)
Labels
0.0063 to 0.0075 inches
(0.16 to 0.19 mm)
including backing sheet

Paper weight :

Single sheet
14 to 22 lb (52.3 to 82.0 g/m^2)
Continuous paper
14 to 22 lb (52.3 to 82.0 g/m^2)
Multi-part forms
[12 to 15 lb] x N
([40 to 58.2 g/m2] x N)
Maximum number sheets (N) = 3
Labels
17 lb (68 g/m^2) maximum

Number of copies:

With continuous multi-part paper only: one original plus up to two copies.
Maximum thickness: 0.01 inches (0.25 mm)

Note: In high temperature and humidity conditions, continuous paper less than 6 inches (152 mm) wide loaded in the rear paper slot must be 17-pound (64 g/m^2) or heavier.

Mechanical

Paper-feed methods: Friction
Pull tractor
Single-bin cut-sheet feeder (optional)

Ribbon: Black ribbon cartridge #7753:
Life expectancy (in LQ, at 48 dots/character): 2 million characters
Film ribbon cartridge # 7768 (optional):
Life expectancy (in LQ): 0.2 million characters

MCBF: For all components (excluding print head): 3 million lines

MTBF: 4000 power on hours (25% duty)

Print head life: 200 million strokes per wire (with fabric ribbon)

Dimensions and weight: (excluding knob and paper guide)

Width:	15.3 inches (390 mm)
Depth:	12.6 inches (320 mm)
Height:	5.2 inches **(131** mm) without pull tractor 5.9 inches (149.5 mm) with pull tractor
Weight:	Approx. **14.1** lb (6.4 kg) without pull tractor Approx. 15.2 lb (6.9 kg) with pull tractor

Electrical

Rated voltage: AC 120 V (120 V model)
AC 220 V (220 V model)
AC 240 V (240 V model)

***Input voltage* range:**	AC **103.5** to 132 V **(120** V model) AC **198** to 242 V (220 V model) AC 216 to 264 V (240 V model)
Rated current:	1.8 A (120 V model) 0.9 A (220 V model, 240 V model)
Power consumption:	(during self test printing in draft mode, at 10 cpi) Approx. 36 W (120 V model) Approx. 38 W (220 V model) Approx. 38 W (240 V model)
Rated frequency range:	50 to 60 Hz
Input frequency range:	49.5 to 60.5 Hz
Insulation *resistance:*	10 MΩ minimum (at DC 500 V between AC power line and chassis)
Dielectric strength (between AC line and chassis):	120 V model: AC 1.0 kV (rms), 1 minute AC 1.2 kV (rms), 1 **second** 220 V model, 240 V model: AC 1.25 kV (rms), 1 minute AC 1.5 kV (rms), 1 second

Environmental

Temperature:	Operation: 41° to 95°F (5° to 35°C) Storage: -22° to 140°F (-30° to 60°C)
Humidity:	Operation: 10% to 80% RH without condensation Storage: 5% to 85% RH without condensation

Interface Specifications

Your printer is equipped with a parallel interface.

Specifications and pin assignments

The built-in parallel interface has the following characteristics:

Data format: 8-bit parallel

Synchronization: $\overline{\text{STROBE}}$ pulse

Handshake timing: BUSY and $\overline{\text{ACKNLG}}$ signal

Signal level: TTL compatible level

connector: 36-pin 57-30360 (Amphenol) connector or equivalent

Connector pin assignments and a description of their respective interface signals are shown in the following table.

Signal Pin	Signal Pin	Signal	Direction	Description
1	19	$\overline{\text{STROBE}}$	IN	$\overline{\text{STROBE}}$ pulse to read data. Pulse width
2	20	DATA 1	IN	These signals represent information of the 1st to 8th bits of parallel data, respectively. Each signal is at HIGH level when data is logical 1 and LOW when it is logical 0.
3	21	DATA 2	IN	
4	22	DATA 3	IN	
5	23	DATA 4	IN	
6	24	DATA 5	IN	
7	25	DATA 6	IN	
8	26	DATA 7	IN	
9	27	DATA 8	IN	
10	10	$\overline{\text{ACKNLG}}$	OUT	About an 11-microsecond pulse. LOW indicates that data has been received and that the printer is ready to accept more data.

Signal Pin	Return Pin	Signal	Direction	Description
11	29	BUSY	OUT	A HIGH signal indicates that the printer cannot receive data. The signal goes HIGH in the following cases: 1) During data entry (ea. char. time) 2) During printing 3) When off line 4) During printer-error state
12	30	PE	OUT	A HIGH signal indicates that the printer is out of paper.
13	-	SLCT	OUT	Pulled up to +5 V through 3.3 KΩ resistance.
14	-	$\overline{\text{AUTO}}$ FEED XT	IN	When this signal is LOW, the paper is automatically fed 1 line after printing. (The signal level can be fixed to this by setting DIP switch 2-3 to ON.)
15	-	NC	-	Unused.
16	-	GND	-	Logic ground level.
17	-	CHASSIS GND	-	Printer's chassis ground, which is isolated from the logic ground.
18	-	NC	-	Unused.
19-30	-	GND	-	Twisted-pair return signal ground level.
31	-	$\overline{\text{INIT}}$	IN	When this level becomes LOW, the printer controller is reset to its power-up state and the print buffer is cleared. This level is usually HIGH; its pulse width must be more than 50 microseconds at the receiving terminal.
32	-	ERROR	OUT	This level becomes LOW when the printer is: 1) in paper out state. 2) off line. 3) in error state.
33	-	GND	-	Same as for Pins 19-30.
34	-	NC	-	Unused.

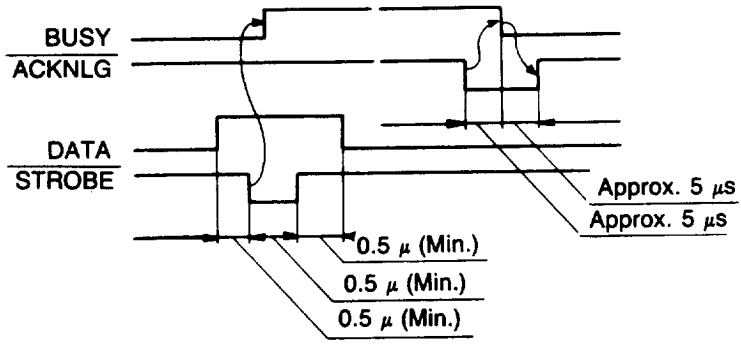
Signal Pin	Return Pin	Signal	Direction	Description
35	-	-	OUT	Pulled up to +5 V through 3.3 KΩ resistance.
36	-	$\overline{\text{SLCT IN}}$	IN	Internal fixing can be carried out with Jumper J6. The level of this signal is factory-set to LOW.

Note:

- The column heading "Direction" refers to the direction of signal flow as viewed from the printer.
- "Return" denotes the twisted-pair return, to be connected at signal ground level. For the interface wiring, be sure to use a twisted-pair cable for each signal and to complete the connection on the return side.
- All interface conditions are based on TTL level. Both the rise and fall times of each signal must be less than 0.2 microseconds.
- Data transfer must be carried out by observing the $\overline{\text{ACKNLG}}$ or BUSY signal. (Data transfer to this printer can be carried out only after receipt of the $\overline{\text{ACKNLG}}$ signal or when the level of the BUSY signal is LOW.)

Interface timing

The figure below shows the timing for the parallel interface.



Printing enabled/disabled signals and control conditions

The table below shows the relationship between printing being enabled or disabled and the on-line / off-line status.

ON LINE (Indicator on)	$\overline{\text{ERROR}}$	BUSY	$\overline{\text{ACKNLG}}$	Printing (Disabled/ enabled)
on line	High	High/Low	Pulsed ea. char.	Enabled (normal cond.)
off line	Low	High	Not generated	Disabled

Initialization

There are three ways that the printer can be initialized (returned to a fixed set of conditions).

Hardware initialization	1. The power is turned on. 2. The printer receives an $\overline{\text{INIT}}$ signal from the parallel interface (pin 31 goes LOW).
Software initialization	3. Software sends the ESC @ (Initialize the printer) command.

Default Settings

The table below shows the default conditions that become effective when the printer is initialized.

Item	Default condition
Top of form position	Current paper position
Page length	The current DIP-switch setting
Left and right margins	Cancelled
Line spacing	1/6 inch
Vertical tab position	Cleared
Horizontal tab positions	Every eight characters
Font selection	Hardware: reset to current DIP switch setting. Software: reset to the current SelecType setting.
Special printing effects	Cancelled
User-defined character set	Hardware: cleared Software: deselected only

In addition, hardware initialization clears the data buffer of all text.

Chapter 8

Command Summary

8

Using the Command Summary

The following section lists and describes all the commands by topic. If a command has no parameters, it is merely listed. If it has parameters, they are explained. The parameters are indicated by lowercase italicized letters, usually n. The examples below show how the parameters are indicated.

ESC @ is a command with no parameters.

ESC U 1/0 is a command that uses 1 to turn the feature on and 0 to turn it off.

ESC $ n1 n2 is a command with two parameters.

ESC D m is a command with a variable number of parameters.

Commands Arranged by Topic

Printer operation

ASCII	Dec.	Hex.	Description
ESC @	64	40	Initialize Printer
ESC U **1/0**	85	55	Turn Unidirectional Mode On/Off
ESC EM n	25	**19**	Control Cut-Sheet Feeder Mode 4: Turns mode on R: Ejects a sheet 0: Turns mode off

Note: For the ESC EM command the variables are the characters "0" (48 decimal or 30 hex) and "4" **(52** decimal or 34 hex). Do not use 0 decimal, 00 hex, 4 decimal, or 04 hex.

Data control

ASCII	Dec.	Hex.	Description
CR	13	0D	Carriage Return

Vertical motion

ASCII	Dec.	Ha.	Description
FF	**12**	0C	Form Feed
ESC C n	67	43	Set Page Length in Lines n = no. of lines (1-127)
ESC C 0 n	67	43	Set Page Length in Inches n = no. of inches (1-22)
ESC N n	78	4E	Set Skip-Over-Perforation n = no. of lines (1-127)
ESC 0	79	4F	Cancel Skip-Over-Perforation
LF	10	0A	Line Feed

ASCII	Dec.	Hex.	Description
ESC 0	48	30	Select l/8-inch Line Spacing
ESC 2	50	32	Select l/6-inch Line Spacing
ESC 3 n	51	33	Set n/180-inch Line Spacing
ESC J ***n***	74	4A	Perform n/l80-inch Line Feed
VT	11	0B	Tab Vertically
ESC B nn	66	42	Set Vertical Tabs Up to 16 tabs; last n should be 0 (1-255)

Horizontal motion

ASCII	Dec.	Hex.	Description
ESC 1 n	108	6C	Set Left Margin n = left margin column
ESC Q n	81	51	Set Right Margin n = right margin column
ESC $ nl n2	***36***	***24***	Set Absolute Print Position n = Specifies print position from left margin in l/60-inch units Total units = ***n1 + (n2 x 256)***
ESC \ ***n1 n2***	***92***	***SC***	Set Relative Print Position Moves current print position in units of l/120 inch for draft and l/180 for LQ Total units = ***n1 + (n2 x 256)***
HT	***9***	***09***	Tab Horizontally
ESC D ***nn***	***68***	***44***	Set Horizontal Tabs Up to 32 tabs (1-255) entered in ascending order Terminated by 0

Overall printing style

ASCII	Dec.	Hex.	Description
ESC x n	120	78	Select Letter Quality or Draft 1: Letter Quality 0: Draft
ESC k n	107	6B	Select Typestyle Family 0: Epson Roman 1: Epson **Sans** Serif 2: Epson Courier 3: Epson Prestige 4: Epson Script 5: OCR-B 7: Epson Orator
ESC ! n	33	21	Master Select To find the value of n add together the numbers of **the** typestyles you want to combine from the list below: 10 cpi: 0 decimal, 00 **hex** 12 cpi: 1, 01 proportional: 2, 02 condensed: 4, 04 emphasized: 8, 08 double-strike: 16, 10 double-width: 32, 20 italics: 64, 40 underline: 128, 80

Print size and character width

ASCII	Dec.	Hex.	Description
ESC P	80	50	Select 10 cpi
ESC M	77	4D	Select 12 cpi
ESC g	103	67	Select 15 cpi
ESC p 1/0	112	70	Turn Proportional Mode On/Off
SI	15	0F	Select Condensed Mode
DC2	18	12	Cancel Condensed Mode
s o	14	0E	Select Double-Width Mode (one line)

ASCII	Dec.	Ha.	Description
ESC W l/0	87	57	Turn Double-Width Mode On/Off
DC4	20	14	Cancel Double-Width Mode (one line)
ESC w l/0	**119**	**77**	Turn Double-Height Mode On/Off

Print enhancement

ASCII	Dec.	Hex.	Description
ESC E	**69**	**45**	Select Emphasized Mode
ESC F	**70**	**46**	Cancel Emphasized Mode
ESC G	**71**	**47**	Select Double-Strike Mode
ESC H	**72**	**48**	Cancel Double-Strike Mode
ESC S 0	**83**	**53**	Select Superscript Mode
ESC S **1**	**83**	**53**	Select Subscript mode
ESC T	**84**	**54**	Cancel Superscript/Subscript Mode
ESC (- ***nn***	**40**	**28**	Select Score ESC (- **301** n1 **n2** **n l = 1:** Underline ***n1* = 2:** Strikethrough n l **= 3: Overscore** **n2 = 0:** Cancel score line selected by ***n1*** ***n2* = 1:** Single continuous line n2 = **2:** Double continuous line n2 = 5: Single broken line n2 = **6:** Double broken line
ESC - 1/0	**45**	**2D**	Turn Underline Mode On/Off
ESC 4	**52**	**34**	Select Italic Mode
ESC 5	**53**	**35**	Cancel Italic Mode

ASCII	Dec.	Hex.	Description
ESC q n	113	71	Select Character Style 0: Normal style **1:** Outline 2: Shadow 3: Outline with shadow

Word processing

ASCII	Dec.	Hex.	Description
ESC SP n	32	20	Set Intercharacter Space n = number of units of space added to the space between characters **(1-127)** Units are **l/120** inch (draft) and **l/l80** inch (LQ and proportional)

Character tables

ASCII	Dec.	Hex.	Description
ESC t n	**116**	**74**	Select Character Tables Selects character table for codes **128-255** **0:** Italic **1:** Graphics 2: Re-maps download characters from **O-127** to **128-255**
ESC R n	82	52	Select an International Character Set 0: USA **1:** France 2: Germany 3: UK 4: Denmark 5: Sweden 6: Italy 7: Spain 8: Japan 9: Norway **10:** Denmark II **11:** Spain II **12:** Latin America **13:** Korea 64: Legal

Userdefined characters

ASCII	Dec.	Hex.	Description
ESC & ***nn***	38	26	Define User-Defined Characters ESC & 0 nl n2 d0 ***d1 d2 data*** ***n1*** = code for first character n2 = code for last character ***d0*** = left space of character dl = Body width of character d2 = right space of character ***data:*** 3 bytes required for each column; super/subscripts require only 2 bytes per column
ESC : ***0 n 0***	58	3A	Copy ROM to RAM n = font family
ESC % n	37	25	Select User-Defined Set 0: Normal set **1:** User-defined set
ESC 6	54	36	Enable Printable Characters With graphics character sets this command enables the printing of codes **128-159**
ESC 7	55	37	Enable Upper Control Codes Cancels ESC 6

Graphics

ASCII	Dec.	Hex.	Description
ESC * m ***n1*** n2	42	2A	Select Graphics Mode Total columns = ***n1 + (n2 x 256)***

Option	Pins	***m***	Horiz. dots/inch
Singledensity	8	0	60
Double-density	8	1	120
High-speed double density'	8	2	120
Quadruple-density'	8	3	240
CRT I	8	4	80
CRT II	8	6	90
Single-density	24	32	60
Doubledensity	24	33	120
CRT Ill	24	38	90
Triple-density	24	39	180
Hex-density •	24	40	360

*Adjacent dots cannot be printed in this mode.

Appendix

Character Tables

These character tables are selected by setting DIP switches 1-1, 1-2, 1-3 and 1-7, or using the ESC t software command. For the graphics character tables, the ESC 6 and ESC 7 software commands let you select whether hex codes 80 to 9F are characters (ESC 6) or control codes (ESC 7).

Italic character table

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL		SP	0	@	P	`	p	NUL		SP	*0*	*@*	*P*	`	*p*
1			!	1	A	Q	a	q			*!*	*1*	*A*	*Q*	*a*	*q*
2		DC2	"	2	B	R	b	r		DC2	*"*	*2*	*B*	*R*	*b*	*r*
3			#	3	C	S	c	s			*#*	*3*	*C*	*S*	*c*	*s*
4		DC4	$	4	D	T	d	t		DC4	*$*	*4*	*D*	*T*	*d*	*t*
5			%	5	E	U	e	u			*%*	*5*	*E*	*U*	*e*	*u*
6			&	6	F	V	f	v			*&*	*6*	*F*	*V*	*f*	*v*
7			'	7	G	W	g	w			*'*	*7*	*G*	*W*	*g*	*w*
8			(	8	H	X	h	x			*(*	*8*	*H*	*X*	*h*	*x*
9	HT	EM	)	9	I	Y	i	y	HT	EM	*)*	*9*	*I*	*Y*	*i*	*y*
A	LF		*	:	J	Z	j	z	LF		***	*:*	*J*	*Z*	*j*	*z*
B	VT	ESC	+	;	K	[	k	{	VT	ESC	*+*	*;*	*K*	*[*	*k*	*{*
C	FF		,	<	L	\	l	¦	FF		*,*	*<*	*L*	**	*l*	*¦*
D	CR		-	=	M	]	m	}	CR		*-*	*=*	*M*	*]*	*m*	*}*
E	SO		.	>	N	^	n	~	SO		*.*	*>*	*N*	*^*	*n*	*~*
F	SI		/	?	O	_	o		SI		*/*	*?*	*O*	*_*	*o*	

Graphics character tables

PC 437 (United States)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL		SP	0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
1			!	1	A	Q	a	q	ü	æ	í		┴	╤	β	±
2		DC2	"	2	B	R	b	r	é	Æ	ó		┬	╥	Γ	≥
3			#	3	C	S	c	s	â	ô	ú		├	╙	π	≤
4		DC4	$	4	D	T	d	t	ä	ö	ñ		─	╘	Σ	⌠
5		§	%	5	E	U	e	u	à	ò	Ñ		┼	╒	σ	⌡
6			&	6	F	V	f	v	å	û	ª		╞	╓	µ	÷
7			'	7	G	W	g	w	ç	ù	º		╟	╫	τ	≈
8			(	8	H	X	h	x	ê	ÿ	¿		╚	╪	Φ	°
9	HT	EM	)	9	I	Y	i	y	ë	Ö	⌐		╔	┘	Θ	∙
A	LF		*	:	J	Z	j	z	è	Ü	¬		╩	┌	Ω	·
B	VT	ESC	+	;	K	[	k	{	ï	¢	½		╦	█	δ	√
C	FF		,	<	L	\	l	¦	î	£	¼		╠	▄	∞	n 2
D	CR		-	=	M	]	m	}	ì	¥	¡		═	▌	ø	
E	SO		.	>	N	^	n	~	Ä	₧	«		╬	▐	∈	■
F	SI		/	?	O	_	o		Å	ƒ	»		╧	▀	∩	

PC 850 (Multilingual)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL		SP	0	@	P	`	p	Ç	É	á	▒	└	ð	Ó	-
1			!	1	A	Q	a	q	ü	æ	í		┴	Ð	β	±
2		DC2	"	2	B	R	b	r	é	Æ	ó		┬	Ê	Ô	‗
3			#	3	C	S	c	s	â	ô	ú		├	Ë	Ò	¾
4		DC4	$	4	D	T	d	t	ä	ö	ñ		─	È	õ	¶
5		§	%	5	E	U	e	u	à	ò	Ñ	Á	┼	ı	Õ	§
6			&	6	F	V	f	v	å	û	ª	Â	ã	Í	µ	÷
7			'	7	G	W	g	w	ç	ù	º	À	Ã	Î	þ	¸
8			(	8	H	X	h	x	ê	ÿ	¿	©	╚	Ï	Þ	°
9	HT	EM	)	9	I	Y	i	y	ë	Ö	®	╣	╔	┘	Ú	¨
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Û	·
B	VT	ESC	+	;	K	[	k	{	ï	ø	½	╗	╦	█	Ù	1
C	FF		,	<	L	\	l	¦	î	£	¼	╝	╠	▄	ý	3
D	CR		-	=	M	]	m	}	ì	Ø	¡	¢	═	¦	Ý	2
E	SO		.	>	N	^	n	~	Ä	×	«	¥	╬	Ì	¯	■
F	SI		/	?	O	_	o		Å	ƒ	»	┐	¤	▀	´	

PC 860 (Portugal)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL		SP	0	@	P	`	p	Ç	É	á	▒	└	╨	α	≡
1			!	1	A	Q	a	q	ü	À	í		┴	╤	β	±
2		DC2	"	2	B	R	b	r	é	È	ó		┬	╥	Γ	≥
3			#	3	C	S	c	s	â	ô	ú		├	╙	π	≤
4		DC4	$	4	D	T	d	t	ã	õ	ñ		─	╘	Σ	⌠
5		§	%	5	E	U	e	u	à	ò	Ñ		┼	╒	σ	⌡
6			&	6	F	V	f	v	Á	Ú	ª	╟	╞	╓	µ	÷
7			'	7	G	W	g	w	ç	ù	º	╫	╟	╫	τ	≈
8			(	8	H	X	h	x	ê	Ì	¿	╢	╚	╪	Φ	°
9	HT	EM	)	9	I	Y	i	y	Ê	Õ	Ò	╣	╔	┘	θ	·
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	VT	ESC	+	;	K	[	k	{	í	¢	½	╗	╦	█	δ	√
C	FF		,	<	L	\	l	¦	Ô	£	¼	╝	╠	▄	∞	n 2
D	CR		−	=	M	]	m	}	ì	Ù	¡	╜	═	▌	ø	■
E	SO		.	>	N	^	n	~	Ã	₧	«	╛	╬	▐	∈	
F	SI		/	?	O	_	o		Â	Ó	»	┐	╧	▀	∩	

PC 863 (Canada-French)

CODE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	NUL		SP	0	@	P	`	p	Ç	É	¦	▒	└	╨	α	≡
1			!	1	A	Q	a	q	ü	È	´		┴	╤	β	±
2		DC2	"	2	B	R	b	r	é	Ê	ó	▓	┬	╥	Γ	≥
3			#	3	C	S	c	s	â	ô	ú		├	╙	π	≤
4		DC4	$	4	D	T	d	t	À	Ë	¨		─	╘	Σ	⌠
5		§	%	5	E	U	e	u	à	Ï	¨		┼	╒	σ	⌡
6			&	6	F	V	f	v	¶	û	³	╟	╞	╓	µ	÷
7			'	7	G	W	g	w	ç	ù	—	╫	╟	╫	τ	≈
8			(	8	H	X	h	x	ê	¤	Î	╢	╚	╪	Φ	°
9	HT	EM	)	9	I	Y	i	y	ë	Ô	⌐	╣	╔	┘	θ	·
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PC 865 (Norway)

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1			!	1	A	Q	a	q	ü	æ	í	▒	┴	╤	β	±
2		DC2	"	2	B	R	b	r	é	Æ	ó	▒	┬	╥	Γ	≥
3			#	3	C	S	c	s	â	ô	ú	│	├	╙	π	≤
4		DC4	$	4	D	T	d	t	ä	ö	ñ	┤	─	╘	Σ	⌠
5		§	%	5	E	U	e	u	à	ò	Ñ	╡	┼	╒	σ	⌡
6			&	6	F	V	f	v	å	û	ª	╢	╞	╓	μ	÷
7			'	7	G	W	g	w	ç	ù	º	╖	╟	╫	τ	≈
8			(	8	H	X	h	x	ê	ÿ	¿	╕	╚	╪	Φ	°
9	HT	EM	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┘	θ	∙
A	LF		*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
B	VT	ESC	+	;	K	[	k	{	ï	ø	½	╗	╦	█	δ	√
C	FF		,	<	L	\	l	¦	î	£	¼	╝	╠	▌	∞	ⁿ
D	CR		−	=	M	]	m	}	ì	Ø	¡	╜	═	▐	ø	²
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Glossary

The following definitions apply specifically to printers.

application program
A software program that helps you carry out a particular task, such as word processing or financial planning.

ASCII
American Standard Code for Information Interchange. A standardized coding system for assigning numerical codes to letters and symbols.

auto line feed
When this feature is selected using a DIP switch, each carriage-return code (CR) is automatically followed by a line-feed (LF) code.

bidirectional **printing**
Printing in which the print head prints from left to right only on every other line. On the other lines, it prints from right to left. This increases the speed of printing because the head prints in both directions.

bit
A binary dig.3 (0 or l), which is the smallest unit of information used by a printer or computer.

byte
A unit of information consisting of eight bits.

character set
A collection of letters, numerals, and symbols.

character table
A portion of the printer's standard ASCII character set that you use for graphic symbols or italic characters.

characters per inch (cpi)
A measure of the size of text characters. Ten cpi is the printer's default setting.

continuous paper
Paper that has sprocket-feed holes on each side, is perforated between pages, and is supplied in a folded stack. Also called fanfold paper.

control code
Special codes used to control printer functions such as performing a carriage return or line feed.

cpi
See characters per inch.

cut-sheet feeder (CSF)
An optional, detachable device that automatically feeds single sheets of paper into the printer.

data dump
A troubleshooting feature that helps advanced users find the cause of communication problems between the printer and the computer. When the printer is in data dump mode, it prints each code it receives in hexadecimal notation and ASCII code. Also called hex dump.

default
A value or setting that takes effect when the equipment is turned on, reset, or initialized.

DIP switches
Small switches in a printer that control various printer functions and set the default status of the printer when it is turned on or initialized. DIP stands for dual in-line package.

dot matrix
A method of printing in which each letter or symbol is formed by a pattern (matrix) of individual dots.

double-height printing
Printing in which each character is twice as tall as normal.

double-strike printing
A way of producing bolder characters. Each character is printed twice.

double-width printing
Printing in which each character is twice as wide as normal.

draft
One of two print qualities available on your printer. Draft uses a minimum number of dots per character for high-speed printing. See also Letter Quality.

emphasized printing
A way of producing darker characters. Each character is printed twice, with the second slightly to the right of the first.

ESC/P
Abbreviation for Epson Standard Code for Printers. This system of commands gives you software control of your printer from your computer. It is standard for all Epson printers and supported by most application software for personal computers.

font
A font is a style of type designated by a family name.

form **feed**
A control code and a panel button that advances the paper to the next top of form position.

initialize
To establish the initial default status of the printer by turning on the printer or sending an $\overline{\text{INIT}}$ signal.

interface
The connection between the computer and the printer. **A** parallel interface transmits data one character or code at a time, and a serial interface transmits data one bit at a time.

italics
A typestyle in which the **characters** slant. This sentence is italicized. Also, a character table that contains italicized characters and symbols.

Letter Quality (LQ)
One of two print qualities available on your printer. Letter Quality provides better readability and appearance at a reduced print speed. See also draft.

line feed
A control code and a panel button that advances the paper one line space.

on line
When the printer is on line, it is in communication with the computer connected to it. The ON LINE button controls the printer's on line / off line status.

parallel interface
See interface.

platen
The black roller that provides a backing for the paper during printing.

proportional printing
Printing in which the width of the character varies from character to character. For example, a capital W receives much more space than a lowercase i. The result looks more like a typeset book than a typewritten draft.

RAM
Random Access Memory. The portion of the printer's memory used as a buffer and for storing user-defined characters. All data stored in RAM is lost when the printer is turned off.

reset
To return a printer to its defaults by sending a command or an $\overline{\text{INIT}}$ signal or by turning the printer off and then back on.

self test
A method for checking the operation of the printer. When the self test is run, the printer prints out its current DIP switch settings and the characters that are stored in its ROM.

subscripts
Printing in which each character is printed at about two-thirds the normal height in the lower part of the character space.

superscripts
Printing in which each character is printed at about two-thirds the normal height in the upper part of the character space.

top of form
The position on the paper that the printer recognizes as the first printable line. The printer feeds the paper to this position when it loads the paper.

unidirectional printing
Printing in **one** direction only. Unidirectional printing is useful for printing graphics because it allows more precise vertical alignment **than** bidirectional printing.

user-defined characters
Characters that **are defined and** stored in **the** printer by the user. **Also known as download** characters.

Index

Command descriptions are not indexed here. For information on a specific command, see Chapter 8.

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V

3000 KEY FEATURES:

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